Texas State Journal of Medicine

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION AND PUBLIC HEALTH IN TEXAS

Our Friends in the Fiftieth Legislature.—We present here as a matter of information, permanent record, and expression of appreciation, the photographs of those members of the Legislature, both House and Senate, who supported throughout the legislative program of the State Medical Association in the recently adjourned session of the Fiftieth Legislature. We are also referring briefly to the program itself, and what happened in connection therewith, upon which we base our conclusions as to who in fact were really our friends, those who were the backbone of the opposition, and those who were merely friendly or unfriendly to the medical profession. Those pictured here beyond any doubt were our friends; they wavered not, neither did they flinch in the legislative battles so fiercely fought in connection with our efforts to secure a revision of our medical licensure laws so that the public health might be protected. There were other irons in the legislative fire which interested the medical profession, but the main effort was to set up adequate educational standards for the practice of the healing art in the state.

It is in connection with this effort that we base these editorial comments. We get the facts, figures, and estimates from the Committee on Legislation of the State Medical Association.

It is appreciated that there were quite a few legislators who supported the program of the State Medical Association to variable extent, some of whom might insist upon it that they are our friends. It is our view that they were perhaps, friendly, but we must insist upon it that a friend stays put and does not waver. It is not sufficient that a legislator vote for the actual passage of a measure in order to be able to claim friendship for the program the measure represents; he must support the measure all along the line. Certainly he cannot claim to be even friendly to the measure if he supports amendments which would kill it in the long run, or defeat its purposes. Neither can a legislator be said to be a supporter of a measure if he insists that those in charge of its passage through legislative channels are wrong in their estimates of what should be done, and how it should be done, and who seeks constantly to change the program of which it is a part. Political and legislative expediences must be considered, and in any legislative battle fundamentals must be respected. Those who strike at the fundamentals of any legislative program cannot be said to be friendly to the program.

Compromise of principle was actually demanded of the medical profession during this fight, compromises which would have defeated the purpose of the legislation. Other compromises were proposed which would merely have gummed up the game, but which would not have invalidated the purpose of the legislation. Our Committee on Legislation and its advisors, both in and out of the Legislature, apparently acted with good judgment and sound wisdom in connection with both. For instance, the proposal that practitioners of the so-called minor schools of medicine, or of the healing art, be exempt

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from the Basic Science Law, or any other law except one of its own devising, was promptly rejected, whereas it was rather reluctantly agreed that representatives of the several schools, or branches of the healing art, be added to the personnel of the proposed Basic Science Board. Legislators who professedly favored the Basic Science Bill, but who very much wanted to pass the political buck, insisted upon a number of compromises, and some of them were rather definitely disappointed when our Committee on Legislation agreed to many of them, and the opposition refused to agree.

Our purpose in discussing this matter here, and thus to present our proven friends to the medical profession of Texas, is not to punish anybody and neither is it propaganda in support of future legislation of this or any other sort. It is purely a matter of recognizing those who have served us and who have travelled the rough legislative road by our side without faltering. When the time comes for decision in any political situation which involves any member of any Legislature, the State Medical Association will be ready with statements of fact relating to the record of any one of them, and will be glad to extend them.

As stated above, the main effort of our Committee on Legislation, and its companion Committee on Public Relations, was to secure a total revision of our plan of medical licensure, as represented by the Medical Practice Act, written under the constitutional provision that no school of medicine shall have a majority control over the issuance of licenses to practice medicine. The House of Delegates of the State Medical Association had so directed. The same effort was made in the two previous regular sessions of the Legislature. Indeed, the problem of medical licensure had been before our Legislature for several years, until the last few years always initiated by the efforts of the cults to secure recognition and practice acts of their own, which efforts, as a matter of course, the regular medical profession of the state had resisted vigorously. It will be recalled that the chiropractors secured the passage of a practice act for their branch of the healing art, only to have the courts declare it unconstitutional, null and void. This fact did not seem to deter the chiropractors who in the meantime had been joined by the so-called naturopaths in seeking recognition by law. Indeed the constantly recurring legislative turmoil resulting from the efforts of sectarian medicine to secure the right to practice medicine in the state, or exemption from the Medical Practice Act, resulted in a weariness of all concerned, particularly legislators, who were very definitely tired of the political implications and the constant wrangling.

As a result of this state of affairs, the State Medical Association decided, in spite of the fact that the Texas law, enacted upon request of the State Medical Association was the first basic science law in the United States, to offer a basic science measure pure and simple. The enactment of this measure would permit the minor schools, or branches of the healing art, to qualify under the Constitution of Texas for further processing necessary to attain the right to practice the healing art in Texas. The processing would be through the media of practice acts, each set up in accordance with the type and kind of practice of each group seeking legalization. It was felt that an applicant for the right to practice the healing art who demonstrates a knowledge of the basic sciences used wholly or in part in the practice of medicine would be safe enough if properly taught the art of the practice of his own branch or school. That would mean, of course, that the present Medical Practice Act with the basic science subjects eliminated, and the Examining Board reduced to those who practice unlimited medicine, would serve as the Board before which educated physicians would go for licensing, and the osteopaths, chiropractors, and naturopaths would set up enabling acts of their own, dealing entirely with the use of their respective methods of practice. In order to work properly, and serve as a protection against ignorance in the sickroom, each such practice act would clearly set out the theory of practice followed by the group concerned, with provisions for development and revision as time goes on. It was anticipated, of course, that the medical practice acts for the minor groups would not be so set up as to infringe upon the medical practice act for the unlimited practice of medicine, or the healing art, if it must be so called.

The Medical Practice Act was accordingly revamped, and a really superior Basic Science measure was prepared. Full publicity was given to the plan, so that everybody, including members and prospective members of the Legislature, and the medical profession, was fully informed on the subject. The whole problem was approached with the idea of meeting the requirements of all who would practice medicine or any part of it, under whatsoever name. No member of the Legislature went to Austin without having had at least a fair briefing on the subject, and it was generally understood that we

were trying to take the monkey off the back of the Legislature, and see that the minor schools of medicine had a chance for their white alley. There had been no lowering of standards for the practice of medicine, but the predicate had been laid for such standards of practice as the minor schools might set up for themselves after having demonstrated their knowledge of the basic sciences. In short, the medical profession had done its best to be fair to everybody in its efforts to provide for the protection of the public against ignorance in the practice of the healing art.

Thus the issue was clear, and those members of the Legislature, whether Senate or House, who chose to go along with the opposition most certainly knew what they were doing. By the same token, those who decided to join us in the laudable enterprise of revamping the medical licensure laws of the state most certainly knew what they were doing, and it is fair to assume that those who wavered and faltered and flopped from one side to the other knew what they were doing. It is easy to understand that the existing confusion might well distort the judgment of some of the legislators, and individual cases will be judged by individual circumstances of which the medical profession and the people interested in the public health locally will be the judge. As has already been stated, the facts can be secured upon application to the Central Office of the State Medical Association.

Bills carrying amendments to the Medical Practice Act and providing for a Basic Science Board of Examiners were introduced early in the session of the Legislature. Nothing much was done about the Medical Practice Act, attention being given first to the Basic Science Bill, the bill being H. B. 138, introduced by Representative Jack F. Ridgeway of Bexar, with Representatives Willis of Kaufman, McClain of Grayson, Williams and Latimer of Bexar, and Overton of Anderson, as co-authors, all of whom supported the measure vigorously except Mr. Jack Overton of Anderson, who actually cast 13 votes against it before the voting in the House was all used up. While it is rather unusual for a co-author of a bill to turn around in harness, it has occurred before. It is never a pretty spectacle.

The Basic Science Bill was reported favorably out of the Public Health Committee by a majority of 10 to 7 votes, the following voting for the bill: Representatives Zivley of Bell, McClain of Grayson, Willis of Kaufman, Sallas of Houston, Oltorf of Falls, Nokes of Navarro, McLellan of Colorado, Heatley of Comanche, Guffey of Wharton, Davis of McLennan, and Willis of Tarrant. Representatives Zivley, Oltorf, Nokes, Willis of Kaufman, Sallas, and Davis led the fight for the bill in Committee. Opposition to the bill in Committee was headed by Representatives Jones of Hunt, Heflin of Harris, Lehman of Lee, and Swanson of Smith.

The Basic Science Bill was first considered in the House on April 28, when Mr. Zivley of Bell moved to suspend the regular order of business and place the bill on second reading and passage to engrossment. The motion prevailed by a vote of 96 to 32. Many crippling amendments were offered, and many votes taken, but no such amendment prevailed. Mr. Obie Jones of Travis offered an amendment to exempt chiropractors. Upon motion of Mr. Ridgeway of Bexar and by a vote of 76 to 51, the amendment was defeated.

On April 29, the measure came up again for consideration, and many additional amendments due to hurt the bill were offered, and again all amendments were defeated. Mr. Ridgeway of Bexar moved to suspend the constitutional rule requiring that bills be read on three several days, and to place the bill on final reading and passage. The motion was lost because it failed to get a four-fifths vote. The roll call on this vote is significant, but there is not space for it here.

On May 5, Mr. Ridgeway of Bexar moved to suspend the regular order of business and have the bill placed on third reading and final passage, which motion prevailed by a vote of 69 to 53. Again numerous amendments were offered, and again all amendments were defeated.

Special credit is due Representatives Aynesworth and Davis of McLennan; Bean of El Paso; Cannon of Nueces; Celaya of Cameron; Martin of Gillespie; Latimer, Williamson, and Willams of Bexar; Yezak of Robertson; Zivley of Bell; and Johnson of Travis, for their part in the maneuvers in the House, and particularly in resisting amendments to the bill offered by the opposition, most of which would have been extremely harmful to the measure had they been adopted. Not the least of the credit due these gentlemen just named is for staying put when pressure was exerted to break a quorum, which pressure failed of the hoped for results because they did sit tight.

There were numerous other friends who rendered service in connection with the debate on the Basic Science Bill, on three different days, during which debate every dilatory maneuver known to the opposition was

used to defeat the bill, such as motions for adjournment, motions to recess, motions to postpone, and, as stated, on one occasion a distinct effort to break a quorum. Among those who actively opposed the Basic Science Bill were Representative C. S. McLellan of Colorado County, who made the strongest and most effective speeches against the measure, and Representatives William A. Miller and Charles A. Murphy of Harris County, and Obie Jones of Travis County, who also made strong speeches in opposition to the bill. In addition to these, the following Representatives voted consistently against the Basic Science Bill: Gardner of Cooke, Goddard of Galveston, Green of Milam, Hydrick of Harrison, Lee of Jefferson, Rampy of Runnels, Sadler of Nolan, Smith of Lubbock, Swanson of Smith, and Wilson of San Augustine. Incidentally, all of those named also voted consistently for the Chiropractic Bill.

A number of Representatives voted occasionally for the Basic Science Bill, and occasionally against the Chiropractic Bill, but in the main opposed the Basic Science Bill and supported the Chiropractic Bill. Among these were Representatives Clifton of Collin, Evans of Grayson, Hanna of Dallas, Heideke of Guadalupe, Jones of Hunt, Lightfoot of Shelby, Markle of Galveston, Moore of Red River, Overton of Anderson, Parkhouse of Dallas, Read of Hardin, Richards of Caldwell, Sellers of McLennan, Shackleford of Polk, Smith of Hays, South of Coleman, Sparks of Grayson, Spencer of Henderson, Turner of Upshur, Walker of Jefferson, Williams of Scurry, Wiseman of Cherokee, Wood of Smith, and Wright of Parker.

Among those inclined to favor the Basic Science Bill and our legislative program, but who were not entirely consistent in their support, to whom we would give credit, incidentally, are Representatives Blount of Howard, Moore of Brazos, McDaniel of Wichita, Svadlenak of Williamson, Teague of Jones, Wagonseller of Montague, Brooks of Jefferson, Helpinstill of Nacogdoches, Lock of Angelina, and Nokes of Navarro. As a matter of fact, Mr. Nokes was very active in bringing the Basic Science Bill out of the House Committee with a favorable report.

Representatives Pyle and Wallace of Tarrant, and Heatley of Comanche, voted most of the time for the Chiropractic Bill, but also most of the time for the Basic Science Bill.

The Basic Science Bill was introduced in the Senate (S.B. 35) by Senators Walter Tynan of San Antonio, Gus J. Strauss of Hallettsville, Buster Brown of Temple, and George Moffett of Chillicothe. Senator Tynan was vice-chairman of the Senate Committee on Public Health, and as such presided in all meetings of the committee in the absence of Senator Fred Mauritz, of Ganado, who was ill and not able to attend. A majority of Senators favored the passage of the Basic Science Bill and opposed the bills introduced by chiropractors and naturopaths. Special credit should be given Senator Tynan, who worked over-time in an effort to secure the passage of the Basic Science Bill, as did Senators Brown of Temple, Moffett of Chillicothe, Strauss of Hallettsville, Aikin of Paris, and several others. Numerous conferences and meetings were held in an effort to agree upon a compromise in the medical licensure program. These meetings were, of course, held while the Senate was not in session. While these meetings undoubtedly represented a lot of lost motion, those who tried to accomplish something through agreement are entitled to credit for their efforts.

Senator J. Alvin York of Bryan offered an amendment to the bill in the Public Health Committee of the Senate, which was bitterly opposed by its authors and those friendly to the legislative program of the State Medical Association. The same amendment was offered in the House by Representative Willis of Tarrant. The amendment was defeated in both the Senate and the House.

The Basic Science Bill was for the most part actively opposed in both the Senate and House by the chiropractor, osteopath, and naturopath supporters. However, all of the medical licensure bills were favorably reported by the Health Committees of the Senate and House, in order that some program agreeable to all concerned might be worked out. The fact that it required a two-thirds majority vote to set a bill for special order, or take it up out of its regular order, interfered fatally with the passage of any of the measures in the Senate.

The Chiropractic Bill (H.B. 40) was introduced in the House by Representative Henry G. Lehman of Giddings, Lee County. The bill was actively supported by Representatives Jones of Travis; Heflin, Miller and Murphy of Harris; Parkhouse of Dallas; Jones and Berry of Hunt; Henderson of Limestone; Swanson of Smith and Gregg; Wilson of San Augustine; Sellers of McLennan; and Smith of Lubbock.

The first legislative battle over this measure occurred in the House Committee on Public Health. The following members of the committee were active in behalf of the measure and voted to report it favorably: Representatives Jones of Hunt, Heflin of Harris, Henderson of Limestone, Swanson of

Smith and Gregg, Shannon of Erath and Hood, Jones of Travis, and Evans of Grayson and Collin.

The following members of the Public Health Committee of the House actively opposed the bill: Representatives Williamson of Bexar, Davis of McLennan, McClain of Grayson, McFarland of Wichita, Oltorf of Falls, Sallas of Houston, Willis of Kaufman, and Zivley of Bell. They all deserve credit for their vim and vigor in opposing the measure.

Representatives Latimer of Bexar, Zivley of Bell, Isaacks and Bean of El Paso, Davis of McLennan, Guffey of Wharton, Williams of Bexar, and Jameson of El Paso also deserve credit for opposing this measure, which they did at every opportunity. The Public Health Committee in the House was headed by Mr. W. A. Williamson of Bexar, who was, of course, strongly in favor of the Basic Science, and strongly opposed to the Chiropractic and Naturopathic bills. There were in excess of twelve roll calls in connection with the Chiropractic Bill, most of them being on amendments offered by the opposition. The first test vote on the floor of the House occurred on March 31, when Mr. Zivley moved to postpone consideration. Mr. Henry G. Lehman moved to table the motion, and the motion to table prevailed by a vote of 68 to 58. On the vote to engross the bill and pass the same to third reading, the vote was again 68 to 58. There were many such test votes, some of them very important, indeed, and most of which would have been fatal to the purpose of the bill. Representative McClain of Grayson sought to have the House resolve itself into a Committee of the Whole, in order to get the opinion of the Attorney General as to the constitutionality of the bill. The vote on this motion lost by a vote of 63 to 63, the Speaker, W. O. Reed, of Dallas, not voting. The bill finally passed the House by a vote of 71 to 59.

In the Senate, on April 28, Senator Fred R. Harris of Dallas, sought to have the Senate Chiropractic Bill (S.B. 79) set as a special order, but the motion was lost by a vote of 10 to 14. Four Senators opposed to the measure were absent. This bill was introduced in the Senate by Senators Pat Bullock of Colorado City and Fred R. Harris of Dallas, who were ably supported by Senators A. B. Crawford of Grandbury, R. L. Proffer of Denton, C. R. Jones of Bonham, and S. J. Parrish of Lubbock.

The Naturopath Bill (S.B. 190) was introduced in the Senate by Senator Charles Jones of Bonham. The companion bill in the House (H.B. 86) was introduced by Representatives Jones of Hunt and F. G. Swanson of Smith and Gregg. There were three other House Bills (H.B. 160, 344, and 793) which pertain to the practice of naturopathy. None of these measures came to a vote in the House, but in the Senate Senator Jones of Bonham sought to have S. B. 190 placed on second reading and passage to engrossment. His motion lost by a vote of 10 yeas and 15 nays, with three Senators absent who would have opposed the measure. Senator G. C. Morris of Greenville led the opposition to this bill in the Senate.

Senator Lacy Stewart of Houston died during the session of the Legislature. He was intensely interested in public health and public welfare matters, and would have helped boost the program of the State Medical Association had he remained in office. He was succeeded by Mrs. Stewart, who will doubtless carry on in support of the ideals advocated by her husband.

The Autopsy Bill (H.B. 217) became a law. It was introduced in the House by Representative Woodrow Bean of El Paso, who was ably assisted by Representative Jameson of El Paso, who spoke in its behalf. The bill was sponsored in the Senate by Senators Buster Brown of Temple and H. L. Winfield of Fort Stockton.

The Texas Cancer Coordinating Council was organized strictly on a voluntary basis, September 26, in Houston, for the purpose of developing a complete cancer program in Texas, of stimulating cancer control activities, and coordinating such activities to prevent duplication and overlapping of effort by the various agencies concerned. The four principal agencies in the state that are active in cancer control are the State Medical Association of Texas, the Texas State Health Department, the M. D. Anderson Hospital for Cancer Research, and the Texas Division of the American Cancer Society. The executive heads of each of these agencies constitute the membership of the Coordinating Council.

Dr. E. W. Bertner, as chairman of the Committee on Cancer of the State Medical Association, has been designated chairman. Other members of the Council are Dr. George W. Cox, State Health Officer; Dr. W. S. Brumage, director of the Division of Cancer Control of the State Health Department; Dr. R. Lee Clark, Jr., director of the M. D. Anderson Hospital for Cancer Research; and Mr. J. Louis Neff, executive director of the American Cancer Society, Texas Division. Dr. Brumage is the secretary.

At its first meeting, the Council agreed that it will serve chiefly as a nucleus for deliberation on specific cancer problems and

that other groups in the state will be asked to designate representatives who will serve in an advisory capacity as the need arises. A number of projects were discussed, chief among these being the establishment of tumor clinics, to provide tissue diagnostic service for indigents in Texas, and to provide for publication of a monthly periodical on cancer, designed primarily to reach the general practitioners of the state. Monthly meetings of the Council are planned.

As expressed by Dr. Bertner, the purpose of this organization is twofold: "First of all, to prevent as far as possible the duplication of programs with the inevitable waste and confusion which such duplication would involve; and second, to make certain that no important gaps exist in the over-all cancer control program of the state."

The Committee on Cancer of the State Medical Association is cooperating closely with and lending all aid possible to the newly-formed Texas Cancer Coordinating Council. The aims and objectives of the Council are for the most part identical with those of the Association's Committee. It is hoped that the agencies represented in the Council, with the assistance of other representative groups in Texas, will go a long way toward reducing the cancer mortality rate in this great state.

One matter of great concern to the Coordinating Council and which demonstrates the cooperative activities of the various agencies represented in the council is the formation of tumor clinics to serve the indigent cancer sufferers in Texas. From the doctor's standpoint the clinics are primarily for postgraduate training in cancer diagnosis and stimulation of physicians to a more careful search for early cancer in their patients. Some of these clinics are for diagnosis only, with referral of patients elsewhere for treatment; others are for diagnosis and treatment. Some clinics accept only indigents, while others accept private patients who are referred by their physicians for consultation on diagnosis and treatment.

The tumor clinics in Texas, about which we have any information, with the place of meeting, the name of the clinic administrator, and the day and time of meeting, are as follow:

Corpus Christi, Memorial Hospital, Ross O. Urban, Administrator, Friday, 8:30 a. m.

Dallas, Parkland Hospital, Dr. J. E. Miller, Director, Friday, 12 noon.

El Paso, City County Hospital, Dr. M. S. Hart, Chairman, Tuesday, 1 to 2 p. m.

Fort Worth, City County Hospital, Dr. Helen R. Gottschalk, Executive Director, Tuesday, 8:30 a. m. to 12 noon; Harris Memorial Methodist Hospital, Dr. John J. Andujar, Director, Thursday, 12:30 p. m.

Galveston, John Sealy Hospital, Dr. Edgar J. Poth, Director, Monday, Wednesday, Friday, 1 to 3 p. m.

Houston, Jefferson Davis Hospital, Tuesday, 1 to 3:30 p. m.; M. D. Anderson Hospital for Cancer Research.

San Antonio, Medical and Surgical Memorial Hospital, Dr. A. O. Severance, Director, Wednesday, 1:30 to 3 p. m.; Nix Cancer Clinic, Thursday, 1 to 2 p. m.

Temple, Scott and White Hospital, Frank A. Thomson, Administrator, Monday through Friday, 8:00 a.m. to 5:00 p.m., and Saturday, 8:00 a.m. to 12 noon; Kings Daughters Hospital, Monday through Friday afternoons.

Texarkana, County Health Department Building.

For further information about any of the tumor clinics listed, inquiry should be addressed to the administrator of the clinic, or to Mr. J. Louis Neff, Executive Director, American Cancer Society, Texas Division, 2310 Baldwin Street, Houston 6.

The Southwest Regional Cancer Conference sponsored jointly by the Tarrant County Medical Society and the Fort Worth Chapter of the American Cancer Society in cooperation with the Texas Division of the American Cancer Society will be held in Fort Worth on November 20. This one-day conference will be the first of its kind held in this section of the country and is expected to be an annual affair.

The guest speakers comprise a group of some of the principal figures of the nation in both clinical practice and research in the field of cancer. They are Dr. Lowell S. Goin, Los Angeles, president of the Radiological Society of North America and past president of the California Medical Association; Dr. Frank B. Queen, Portland, Ore., professor of pathology at the University of Oregon School of Medicine and director of the Oregon State Cancer program; Dr. Edmund B. Cowdry (Ph.D), St. Louis, professor of anatomy at the Washington University School of Medicine and director of research at the Barnard Free Skin and Cancer Hospital; and Dr. Charles T. Stone, Galveston, professor of medicine at the University of Texas Medical Branch.

The conference will consist of lectures on various phases of the cancer problem—diagnosis, treatment, and research—presented by the guest speakers in morning and afternoon sessions, followed by discussion periods, and a meeting in the evening to which the public will be invited. The evening meeting will be conducted in a manner particularly appealing to the laity. Dr. Goin, an outstanding figure in organized medicine in the United States and a fluent speaker, and Dr. Stone, who is well known in medical circles of the state as a great teacher and lecturer, will be the speakers at the public meeting.

Dr. Cowdry, who is notable in the field of cancer research, has for a number of years

been successfully engaged in research in a number of medical subjects in addition to cancer. He has been commended recently for his cancer research program at Barnard Free Skin and Cancer Hospital by Dr. Walter M. Simpson from the Charles S. Kettering Foundation, who said that Dr. Cowdry had been carrying on a "straight down the road research program."

There will be no registration fees. Further information about the conference may be secured from the Tarrant County Medical Society, 209 Medical Arts Building, Fort Worth 2.

The Southern Medical Association will meet Thanksgiving Week in Baltimore, concentrating into three days, November 24, 25, and 26, activities which heretofore consumed three and one-half days. Registration early the morning of Monday, November 24, will be followed by a scientific program conducted by the local medical profession. The other two days will be devoted to meetings of the twenty-one sections. General public sessions will be held the evenings of the first two days.

The majority of the meetings and the scientific and technical exhibits, as well as registration, will be found at the Fifth Regiment Armory on Hoffman Street. The other meetings, with the exception of the public sessions, will be held at the home of the Medical and Chirurgical Faculty of Maryland and the Baltimore City Medical Society, 1211 Cathedral Street, two and one-half blocks from the Armory.

Hotel reservations are being handled only through the Hotel Committee, Southern Medical Association Meeting, 1714 O'Sullivan Building, Baltimore 2. The committee urges those who plan to attend the meeting to write immediately full details of when they will arrive and what accommodations they desire.

Upon presentation of his card of membership in a state medical association and payment of annual dues of $4, any member in good standing of his state association is eligible to become a member of the Southern Medical Association and to attend the meeting in Baltimore. Membership in the organization carries with it subscription to the *Southern Medical Journal.*

Library Donations.—Since the last acknowledgment in the JOURNAL was made (March, 1947, issue), two welcome contributions have been received by the Library of the State Medical Association.

Dr. M. L. Stubblefield, Baird, recently gave a complete, bound set of the *American Journal of Diseases of Children* from volume 1 through volume 67, covering the years from 1911 through 1944. Dr. Stubblefield's journals will replace an incomplete set which the Library had. Another step has thus been taken to complete the files of medical journals available in the Library. The Library has been eager to fill the gaps in its journal files, and regularly lists under the heading "Library Needs" in the Library section of the JOURNAL specific numbers which are needed to complete given volumes of various journals. Several readers have donated missing issues to the Library, a service for which the staff is grateful. Dr. Stubblefield's contribution, however, is particularly outstanding and will be of great value to pediatricians who use the Library of the State Medical Association.

A contribution of $5 in memory of Dr. Melvin O. Rea, formerly of Dallas, has been made to the Library Building Fund by Mr. and Mrs. L. Langholz, Miss Alma M. Baetz, and Mr. and Mrs. C. F. Peters, all of San Antonio. Dr. Rea died in a Stephenville hospital July 7, 1947. This memorial contribution is much appreciated.

The Texas Memorial Medical Library Association, to which the cash contribution was directed, is a common law trust, established to secure financial support for the Library of the State Medical Association. Donations to it are deductible for purposes of income tax. A donation of as much as $1,000 can be set up as a permanent memorial fund designated in accordance with the wish of the donor. The Trustees of the State Medical Association, who are in a position to receive, make use of, and distribute donations for the support of the Library, comprise the Library Association. The Library, however, belongs to the State Medical Association and is managed by that organization.

Community Chest Drives in 1,000 communities throughout the United States are being conducted at this time. A unified campaign by various charitable and character-building agencies to raise funds for their support was first put into effect in 1887 in Denver. This year, 12,000 services throughout the nation are represented in such community campaigns, which permit a minimum of expenditure for administration and a maximum of benefit to the cooperating agencies, with a saving of time and trouble for the persons whose contributions are solicited.

It is common knowledge that "when one member of the human family suffers, all suffer, and when one prospers, all prosper," so that indirectly each member of the community benefits from the activities of such services as hospitals, clinics, maternity homes, visiting nurses, Boy and Girl Scouts, YMCA, YWCA, Salvation Army, and community centers—services regularly included in the budgets of local community chests. In addition, it has been shown that direct benefit is received by four out of every ten families.

The red feather, a badge of courage and chivalry throughout recorded history, has been adopted by community chests as a symbol of "our faith in man, our willingness to share what we have with others, our desire to bring health, happiness, and opportunity to all the people in our community."

The red feather services are calling now for the support of each person in every locality where a community chest drive is being conducted. The call should be answered generously. Doctors are noted for their generosity.

Annual Session Report of Progress.—The Committee on General Arrangements for the Annual Session has completed its plans for our accommodations at Houston, next year, with the exception of a few items, all of which are under way. The President, the State Secretary, and the Chairman of the Council on Scientific Work have approved the arrangements as made and as proposed. Sufficient progress has been made to warrant us in calling the matter to the attention of our readers that they may be informed. Reference to the progress of arrangements will be made in these columns from time to time.

The 1948 Annual Session will be held in Houston April 26-29.

Headquarters, Registration, and Information will be housed on the mezzanine floor of the Rice Hotel, the hotel at which all General Meetings, the meetings of most of the Scientific Sections, and all meetings of the House of Delegates will be held. Scientific and Technical Exhibits will be set up on the mezzanine floor of the Rice Hotel. Technical Exhibit information will go forward to prospective exhibitors in the near future.

The Section on Public Health will hold its meetings in the Texas State Hotel, only a few blocks distant from the Rice Hotel.

As before, this hotel will be Public Health Headquarters. The Conference of City and County Health Officers will be held there on Monday of the meeting.

Headquarters for the Woman's Auxiliary will be set up in the Lamar Hotel. The meetings of the Auxiliary will be held at the new Foley Building, now nearing completion, in the same block with the Hotel.

The Clinical Luncheons constitute the principal item remaining uncertain. It will be necessary to provide for some of them in places other than the Rice Hotel. There is not room there for everything, and some of the meetings are going to be crowded as it is. The fixed contracts of hotels with service clubs and the like make it very difficult to run in additional luncheons in connection with conventions.

Our distinguished guests have all been invited, and all have accepted. The list is most attractive, indeed. It will be published soon.

Scientific Section officers report that they have sufficient requests for positions on their program to enable them to close the programs at any time. They must, according to the By-Laws of the Association, keep their programs open until the middle of January, at which time the Council on Scientific Work will meet and approve the selections of Section officers. In this connection, our readers are urged that if they would read papers at the Annual Session, they should offer them at once, with full explanation as to the subject, scope, and character of the papers offered. Indeed, the best procedure would be to prepare the proposed paper in advance, and let the Section officers have copies, or at least full synopses thereof. The list of Section officers appears in the July, 1947, number of the JOURNAL (beginning on page 165). Any request for a place on the program sent to the State Secretary will be referred to the officers of the proper section.

Any of our readers who may desire to offer scientific exhibits either in support of a paper to be presented through the Scientific Sections, or otherwise, should communicate as soon as possible with Dr. X. R. Hyde, Medical Arts Building, Fort Worth, chairman of the Committee on Scientific Exhibits. Films to be presented at the Annual Session should be sent to the Library of the State Medical Association for review by the committee. Only those films which thus pass muster will be accepted for the Motion Picture Exhibit at the Annual Session.

Plans have about been perfected for a big public health meeting on Wednesday night, taking the place of the usual county medical society entertainment, which, it will be remembered, was abolished by edict of the House of Delegates, at Dallas, last May. The city auditorium has been secured for

the meeting. The program will be of interest both to the medical profession and the lay public. Distinguished speakers will be on the program for addresses on public health, socialized medicine, and quacks and quackery.

The Rice Hotel will accept applications for reservations at any time, but reservations will not be made until after January 1. It is presumed that all of the hotels will adopt the same policy. It will be remembered that hotel accommodations are still scarce, and it is fair to presume that they will continue to be scarce for some months to come. It is a matter of first come first served with the hotels. The State Medical Association can make reservations only for the out-of-state guests of the Association. It will be necessary that our members make their own reservations. Hotels will no longer hold blocks of rooms on blanket reservations.

CURRENT EDITORIAL COMMENT*

Present Trends in Shock Therapy.—The past two years have witnessed the administration of tens of thousands of shock treatments in this country and abroad. In the same period, the literature concerning this purely empiric form of treatment of the major psychoses has increased in an ever rising crescendo. With all this, certain trends are evident, some points are clarified, a few advances have been made, and the fundamental problems remain unanswered.

The present trend is toward an ever wider use of the electric shock method in the office of the private practitioner of psychiatry, largely as a means of avoiding the necessity of hospitalization. Concomitantly, this has led to the deplorable practice of using shock treatment for many patients for whom it is not indicated, either because psychotherapy is too burdensome, or because the desire to carry out a lucrative but unnecessary procedure cannot be resisted. Office treatment has been made possible through the low mortality, the necessity of few attendants, and the relatively inexpensive apparatus necessary for producing electrically induced convulsions. In addition, the public is becoming gradually informed and relatives not infrequently inquire about the advisability of the treatment.

It is more clearly established that the elated and depressed phases of manic depressive psychosis and involutional melancholia frequently respond dramatically to electroconvulsive therapy. Many schizophrenic patients enter a remission during or very shortly after treatment. In the latter group, some of the literature supports the combined use of insulin comas with electric shock as being perhaps more effective. Metrazol, with its narrow margin of safety and its terrifying effect on the patient, is found to give no better results than electricity, and is dropping rapidly into obscurity. So-called "insulin subshock" has produced beneficial results without producing deep comas or convulsions. This artificial production of a moderately hypoglycemic state seems not only to allay anxiety, but to be an effective sedative. Such treatment may be given to outpatients by trained personnel. Although sporadic efforts to introduce the use of shock therapy in the treatment of neuroses have been made, it is now more generally conceded to be contraindicated.

Except for the introduction of adjuvant drugs, few advances in technique have been developed, perhaps because shock treatment is relatively new. Within the past two years there has been a growing use of curare intravenously to minimize the peripheral effects of electrically induced convulsions. This has greatly reduced the incidence of fractures, especially in older patients, but has the drawback of necessitating a highly trained hospital team and the utmost care in combatting respiratory embarrassment. There is an associated increased mortality rate. Intravenous sodium amytal quiets the patient who is dangerously overactive after treatment, but the combination of curare and sodium amytal is to be avoided. The central respiratory depression from sodium amytal added to the peripheral paralysis from curare too frequently creates a situation which requires heroic measures.

The fundamental problems remain unanswered. Why shock treatment seems to alleviate some mental illness and not others is unknown. Whether it merely cuts short the duration of a particular episode, as many suspect, or has a more lasting effect remains to be proved. What the underlying pathophysiology may be is completely obscure. It is not a substitute for psychotherapy and may merely represent a groping step toward a more rational combination of physical and psychological treatment. Although some of the major possibilities and limitations of shock treatment have been well defined, its true character awaits clarification.

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*This department of the JOURNAL presents editorial comments on current items pertaining to the science, art and practice of medicine, contributed by members of the State Medical Association and scientists closely associated with the medical profession of Texas. Invitation is hereby extended to any member of the State Medical Association of Texas to submit such discussions for this department. The discussions should not be more than 500 words in length.

ORIGINAL ARTICLES

SOME ASPECTS OF NAVAL MEDICAL RESEARCH IN WARTIME

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Each succeeding war creates more and more medical problems. In the recent war, fighting men were forced to function efficiently and effectively in extremes of environment—afloat, afield, and in the air. Our "men-o-wars" men literally fought from the ocean bed to the substratosphere, from arctic frigidity to tropical torridity, from monotonous calm to explosive blast. The tempo of modern fighting is now paced by the whirring of propellers and the whirling of wheels, instead of the slow tramp, tramp, tramp of marching feet.

The corridors of modern wars were vibrant with deafening roar of motors, redolent of petroleum fumes, and illumined by the Martian flash of new machines of war. Recent wars have presented their problems *sui generis* which have no counterpart in times of peace, and their solutions are characterized by a quality of immediacy. Thus research during the war has two special attributes: (1) the problems which grow out of, and are formulated by wartime experience and (2), the economy of time is such that a workable solution today is more to be desired than a complete answer tomorrow.

For many years before the war the Naval Medical Department had carried on research projects in many naval establishments and was prepared to expand to meet the prospective increase of wartime medical research.

Prewar medical research was carried out at the Naval Medical School, Washington, D. C.; the Submarine Base, New London, Conn.; the Experimental Diving Unit, Navy Yard, Washington, D. C.; and at such air bases as Pensacola and San Diego.

This early research led to the development of liquid plasma, to immunization with tetanus toxoid, to the use of helium in deep sea diving, to the introduction of air conditioning in submarines, and in aviation to the development of an "anti-blackout" belt. Of greatest importance, as was subsequently proved in World War II, was the planning and organization of the medical aspects of landing operations, combined operations, and joint operations which were carried out at the Marine Barracks, Quantico, Va.

Read at a general meeting of the State Medical Association of Texas, Annual Session, Dallas, May 8, 1947.

Plans had been made, in the event of war, to expand and develop the existing research facilities and to supplement these with newer and more specialized research activities.

One of the main research establishments, constructed and commissioned during the war, was the Naval Medical Research Institute—abbreviated NMRI and organized as a component of National Naval Medical Center, Bethesda, Md.

NMRI was commissioned on Navy Day, October 27, 1942, and proved to be the central and primary focus of naval medical research during wartime. As originally organized the Naval Medical Research Institute consisted of the following divisions: (1) naval environmental medicine, (2) naval preventive medicine, (3) dental research, and (4) equipment research.

The laboratory groups comprised: (1) biophysics, special senses, and applied psychology, (2) nutrition and biochemistry, (3) microanatomy, pathology, and electron microscopy, (4) microbiology, bacteriology, and virology, (5) physiology, pharmacology, toxicology, and experimental surgery, (6) environmental compartments—high altitude, deep-sea, and psychometric chambers, (7) dentistry, and (8) biometrics.

The projects were classified into: (1) general—affecting the Navy as a whole, (2) maritime medicine—surface vessels, (3) submarine and diving medicine, (4) aviation medicine, and (5) field medicine—medical service with the U. S. Marine Corps.

The staff eventually consisted of 62 commissioned officers, 20 Wave officers, 2 civilian scientists, 110 hospital corpsmen, and 18 enlisted Waves.

One example may be given from the early investigations of the Naval Medical Research Institute, namely, the attempt to obtain drinking water from sea water.

The plaint which issued from the parched

> "Water, water everywhere,
> And all the boards did shrink!
> Water, water everywhere,
> Nor any drop to drink."

need no longer be the wail of shipwrecked men, for Elysian visions of sweet water flowing from the briny billows of the sea to quench their intolerable thirst are now a reality. For the first time in history, an effective, simple, chemical method of demineralizing seawater has been achieved—an invaluable contribution to the morale and physical welfare of our fighting men.
lips of the Ancient Mariner,

EQUIPMENT AND FACILITIES

It may be of interest to enumerate and describe briefly some of the special equip-

ment and facilities afforded by the Institute. At hand are gas-mixing rooms where gas mixtures of any combination may be compounded and properly mixed under high pressures. These gases, such as helium-oxygen mixtures, were used for experimental work in deep sea diving and submarine medicine. The laboratories of psychometry are designed to produce temperatures of 0 F. to 120 F., with a control of 1 degree, and humidities range from 0 to 100 per cent, with a control of 1 per cent. Treadmills, ergometers, and spirometers are used to study the "man-o-wars" man in relation to his external environment. Nutrition, water and salt metabolism, and clothing are some of the fields research is covering in this division.

Aero-Physiology. — The High Pressure Chamber, housed in a separate building—the Experimental Diving Building—is a vertical diving tank to which a horizontal chamber is attached. A high pressure chamber for animals stands near by. These chambers will withstand a pressure of 500 pounds per square inch, which permits simulation of diving to a depth of 1,000 feet below the surface of the ocean. There is also an open water tank 10 feet in diameter and 12 feet high which is used to test various measures pertaining to the conservation of life and health at sea, and for the study of shallow diving operations. This tank has furnished the setting for testing much of the flotation gear for rescue at sea. Studies on determination of the fat content of the body, utilizing Archimedes' principle of water displacement, have also been carried out in this tank.

The Low Pressure Chamber, which simulates environmental conditions that combat planes encounter, such as extremely low barometric pressures, is capable of attaining a simulated altitude of 60,000 feet and a tempremature of —67 F. within fifteen minutes of starting from atmospheric pressure and ordinary room temperatures.

Experimental Dentistry has contributed to the field of dentistry by working out an effective method of cooling the jaw to give anesthesia for filling teeth and by studies on other dental projects.

Electronic Microscope.—This facility is housed in an air conditioning compartment and has conducted certain studies on the structure of viruses. The chief problem at the moment is that of developing a method of preparing tissue sections of such thinness (.00001 inch) that they may be successfully examined with this instrument.

The Equipment Design Division is a facility established for developing safety appliances and biological devices. Besides invaluable help in furnishing complicated pieces of apparatus to the various laboratories, this facility has developed a much improved model automatic 35 mm. camera for photofluorographic use. Under the direction of this division, design of light body armor incorporating laminated plastics of great tensile strength was developed.

A semirigid stretcher has been designed to fill a long felt need by medical officers aboard ship for transportation of wounded out of compartments and along narrow passages and gangways where manipulation of a rigid stretcher becomes difficult if not impossible.

The Heating, Air Conditioning, and Ventilating Unit is located on the third floor of the Experimental Diving Unit in a suite of rooms simulating battleship compartments. Here a study is made of all types of ventilating, heating, and humidifying equipment used by ships to nullify the meteorological conditions encountered at sea. The suite is admirably adapted to carrying out final laboratory observation prior to field tests in much the same way that a pilot plant serves an industrial chemical concern.

The Nutrition Facility is organized to make basic studies of the value of foodstuffs, to develop better foodstuffs in the laboratory, and to carry out studies of food preparation and consumption as they actually exist in the field. Most of the time has been devoted to the latter type of study, which has been made possible by the unique development of a mobile nutrition unit installed in a small truck.

The Facility of Parasitology is active in the study of two diseases at the moment, namely malaria and filariasis. The treatment of malaria in chickens by inhalation of gases has been carried out. The use of antimony in various forms for therapy of filariasis in dogs and cotton rats is also under investigation, as well as its effect on the chickens with malaria.

The Pathology Facility is well equipped to make elaborate studies of morphology basic to the solution of many physiologic, pharmacologic, and bacteriologic problems. In addition to supplying these general services, two related hazards of deep sea diving—bends and oxygen poisoning—have been studied with great thoroughness.

The Facility of Pharmacology and Toxicology is equipped to handle problems dealing with the evaluation of drugs on the supply table and the development of better

drugs, as well as to study the pharmacology and toxicity of new drugs.

The Physiology Unit, as apart from the special applications to low and high pressure, is equipped to carry out studies in chemical metabolic, respiratory, and circulatory phenomena. It has been principally engaged in a practical matter of great importance to the Navy, namely, attempts to measure and to follow degrees of physical fitness under training and under adverse environmental conditions.

Chemistry.—This facility is equipped and ably organized to cope with the most diverse problems ranging from inorganic analysis of heavy metals, as, for example, the possible presence of a poisonous metal in food containers, to the analysis of respiratory and rare gases.

Following are listed a limited number of studies and investigations of the Institute: sunburn prevention; protective clothing for subjects in cold water; food and water for survivors at sea; immersion food; anti-flashburn cream; injuries from air blast, underwater blast, and "deck thrusts"; decompression sickness—bends; stretchers and litters for naval use; protective clothing against water hazards of naval warfare; sterilizing canteen water, penicillin in treatment of peritonitis; tantalum in surgery; storage of human blood plasma; ventilation; and antimalarial drugs.

All research in naval medicine was coordinated under the Research Division of the Bureau of Medicine and Surgery, which was, during the war, under charge of Rear Admiral H. W. Smith, M.C., U. S. Navy (Ret.), one of the outstanding and most able medical officers.

In conclusion, it may be stated that one great military writer has resorted to medical terminology and has defined war as an "epidemic of trauma." It seems appropriate that the civilian and military doctors continue to be prepared to cope with the epidemic of trauma created by the modern implements of human destruction.

An interesting fact is involved in the functions of war medicine. While other activities and agencies conducted research to create newer and greater instruments that will increase the rate of human destruction, the medical and surgical professions have initiated research to develop improved methods to diminish and to repair, on friend and captured foe, the effects produced by these newer weapons of war while this epidemic of trauma was raging.

206 East Twelfth Street.

GENITAL ABNORMALITIES IN CHILDHOOD AS SEEN BY THE UROLOGIST

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and
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Genital abnormalities of pediatric interest may be divided into two groups: (1) those manifesting congenital defects of development and (2) those showing a disturbance of function of the endocrine glands. In this article we shall present personal experiences and opinions rather than attempt to review the extensive literature on the subject.

DEFECTS OF DEVELOPMENT

Hypospadias.—The most common genital abnormality we have encountered is that of hypospadias in boys. In this condition the urethral meatus does not open at its normal site at the tip of the glans penis but may be found at any location from just proximal to the glans all the way back to the mid point of the perineum.

In the first degree hypospadias (fig. 1a), the most frequent type, no treatment beyond insuring the adequacy of the opening is necessary as the organ is capable of performing intromission and insemination.

However, in the second and third degree types where the opening is at the penoscrotal junction or in the perineum, the chordee (that is, downward curvature of the organ) makes surgical correction mandatory to allow the penis to function normally. In these latter types, the penis is usually small and bound down; the scrotum is bifid; and the sex of the person is determined with difficulty, particularly as nondescent of the testes is often a concomitant feature. Many pseudohermaphrodites in reality have third degree hypospadias.

Details of the surgical technique are not within the scope of this paper, except to state that multistage operations are necessary. The first stage consists of straightening the penis by excision of fibrous bands on its under surface to permit normal erections. Subsequent stages are aimed at construction of the urethral canal from the penoscrotal or perineal opening to the end of the penis. Circumcision should never be done in the case of hypospadias because the preputial skin is of inestimable value in the plastic procedure. Relief of the chordee can be undertaken at any time after the boy is 2 years of age; but subsequent stages should be delayed until

From the Urological Departments of Southwestern Medical College, The Dallas Medical and Surgical Clinic, and Texas Children's Hospital.
Read before the Section on Pediatrics, State Medical Association of Texas, Annual Session, Dallas, May 7, 1947.

the organ has reached sufficient size to permit the mobilization and suture of the necessary skin flaps. Although we have obtained successful results in young adults, the operative work should ideally be completed by the time the child is from 8 to 10 years of age, and certainly by the beginning of puberty. It seems to us that the pediatrician's role in these cases is to explain the above facts to the distraught parents, and assure them that patience on their part and persistence of the surgeon may be expected to result in a satisfactorily functioning organ. We present 2 illustrative case reports:

CASE 1.—An 8 year old boy was first seen in April, 1937, with a penoscrotal type of hypospadias (fig. 1b). At birth, according to the parents, there had been a discussion between obstetrician and nurse as to whether the child was a boy or girl, and he was regarded as a girl until the age of 2 years, when the sex became obvious. The embarrassment brought on by this confusion was instrumental in causing the family to move from a small town to a large city. A first stage plastic operation to correct the chordee was done on April 17, 1937, and four months later a urethra was constructed. Healing was primary except for a small fistula which was subsequently closed after two attempts. The patient has been observed for the past ten years, during which time the penis has developed in normal fashion.

CASE 2.—A 23 year old white pseudohermaphrodite was seen on May 23, 1940. The boy had been regarded by his family as a probable hermaphrodite until one year previous to admission, at which time abdominal exploration done elsewhere showed no signs of internal female genitalia, and a blind pouch (previously thought to be the vagina) had been excised. Physical examination by us showed the general configuration of a female. The appearance of the external genitalia is shown in fig. 1c. The phallus was small, curved, and bound down. The right testicle was undescended, and the left was just entering the bifid scrotum. The external meatus opened in the middle of the perineum. The patient received massive doses of testosterone for a period of several months with no definite change in the appearance of the genitals. On July 11, 1941, a first stage Torek operation was done on the right. A normal appearing testicle which lay at the level of the external ring was sutured to the thigh. The left scrotal contents were explored and a normal testicle exposed. There was no sign of ovarian tissue on either side. The chordee was corrected. The patient did well and on April 4, 1942, a new urethra was constructed, and the right testicle freed from the thigh. Shortly thereafter, the patient married and performed intercourse to the mutual satisfaction of himself and his wife.

Epispadias.—In epispadias, the roof of the urethra fails to close so that the penis has a spade-like appearance with the floor of the urethra forming a furrow along the dorsum of the organ (fig. 1d). In advanced cases, this lack of closure involves the bladder, resulting in complete extrophy. This anomaly, which is one of the rarest encountered in urology, may also occur in girls. If epispadias alone is present, a urethra can be formed by simple infolding of the skin. However, if extrophy of the bladder is present, transplantation of the ureters to the bowel is indicated, as it is the experience of the most competent operators that it is virtually impossible to construct a bladder neck with normally functioning sphincters. We present 2 cases of this disorder:

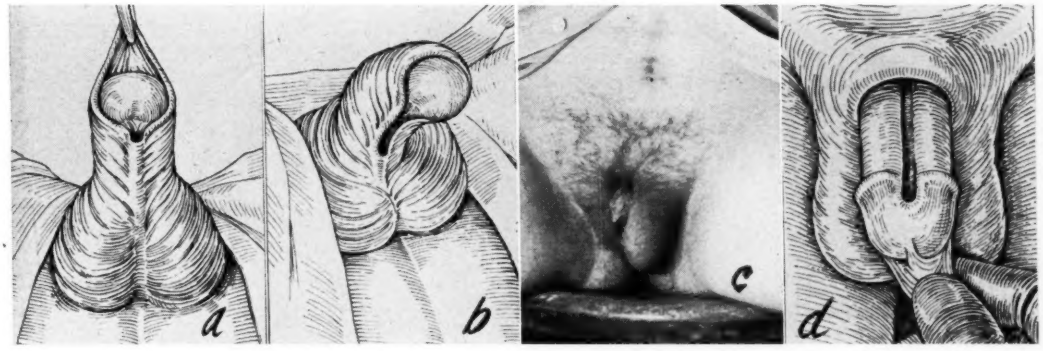

FIG. 1a. First degree hypospadias.
b. Second degree hypospadias. Note chordee and hooded foreskin.
c. Case 2. Third degree hypospadias. The patient had been considered a hermaphrodite.
d. Epispadias.

CASE 3.—A 5 year old white boy was admitted to the Texas Children's Hospital on September 19, 1941, with the complaint of "a defect in the privates" and no control of the bladder. Examination revealed a short, stubby penis with complete epispadias, the entire urethra being open dorsally. Cystoscopy showed normal appearance of the bladder neck. After preliminary suprapubic cystotomy to divert the urine, the region of the sphincters was plicated and the roof of the urethra closed. The final appearance of the penis was satisfactory and the child was completely continent when last seen. We have been unable to get a recent follow-up.

CASE 4.—A 24 year old white man was first seen March 20, 1941, complaining of pain in the left renal area, with chills and fever. Eighteen years previously, at the age of 6, the patient had had both ureters transplanted into the bowel by Dr. Charles Mayo for extrophy of the bladder. Following this operation, he had done remarkably well, had taken part in athletics, and had been graduated from college and a professional school. Recently, he had suffered from an infection in the left kidney. Physical examination showed a well developed and

well nourished adult with an epispadias and surgical scars in both lower quadrants, and with the left kidney palpably enlarged and tender. Intravenous pyelograms (fig. 2) showed a remarkably normal appearing right kidney and ureter with a nonfunctioning hydronephrotic left kidney. Left nephrectomy was done for an infected hydronephrosis, from which the patient made an uneventful recovery. At present, six years following nephrectomy and twenty-four years after ureteral transplantation, the patient is enjoying good health. This case

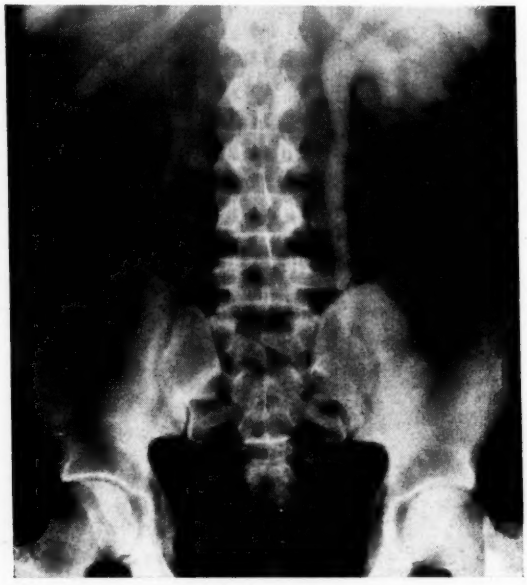

FIG. 2. Case 4. Excretory urogram eighteen years after transplant of ureters into the bowel. The right kidney is normal; the left hydronephrotic.

demonstrates the value of early ureteral transplantation in extrophy of the bladder, whereby a potential social outcast has been able to lead a useful professional life.

Space does not permit the discussion of undescended testicle and hydrocele in this paper.

ENDOCRINE DYSFUNCTION

As we have seen them, genital abnormalities in children due to endocrine dysfunction are clinically divisible into three main groups: (1) pseudohermaphroditism in girls, (2) precocious puberty or premature virilism in boys, and (3) a miscellaneous group including boys with breast changes alone, boys with hypoplastic external genitalia, and cases of so-called Fröhlich's syndrome. This latter syndrome is more familiar to the pediatrician than to the urologist and will not be discussed here.

While isolated instances of abnormal genital development may be attributed to tumors of the pineal body, the pituitary, the thymus, the ovary, the testicle, or the ovotestis of the true hermaphrodite, it is becoming apparent that the great majority are due to dysfunction of the adrenals, either tumor or hyperplasia. While only 39 cases of true hermaphroditism have been reported in the world literature, the condition must be considered and ruled out in the type of case we are discussing. This may be done by exploratory laparotomy and biopsy of any suspected tissue.

Adrenal cortical extracts have been shown to contain thirty-odd different chemical substances having hormonal effects on body fluid distribution and excretion; carbohy-

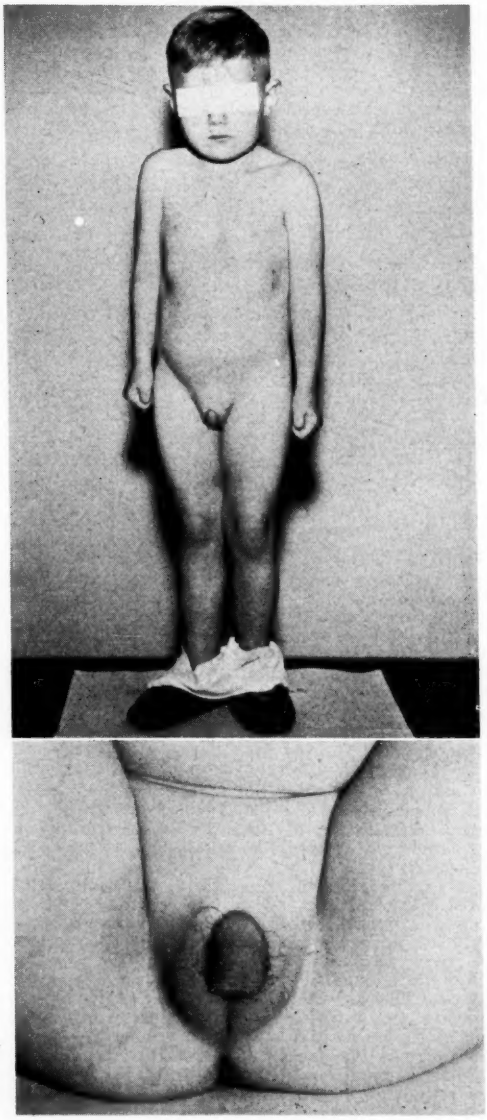

FIG. 3. Upper. Case 5. Pseudohermaphroditism in a 2½ year old girl.
Lower. Close-up of genitalia of case 5.

drate, fat, and protein metabolism; and body growth and sexual development. Since this is true, it is not surprising that derangements from the normal physiology may result in bizarre and complicated clinical pictures. Thus, if excess production of androgens occurs in an immature female, masculine changes in the genitalia may be expected to develop, while similar production in the immature male brings on precocious puberty and premature virilism. On the other hand, the derangement of production of metabolic hormones may result in Cushing's syndrome (buffalo obesity, hirsutism, hypertension, glycosuria, and so forth). In passing, it may be noted that Farber and others in 1943 listed 27 cases of Cushing's syndrome occurring in persons less than 16 years of age.

Pseudohermaphroditism.—In true hermaphroditism there is the presence of gonadal tissue of both sexes with the external appearance combining certain features of both male and female. On the other hand, in pseudohermaphroditism, gonadal tissue of only one sex is present with some of the accessory features of the opposite sex. Given a child whose external genitalia have certain characteristics of both sexes (namely, an enlarged phallus with a pouch-like meatus at its base which may be either a hypospadia or an infantile vagina) it is necessary first to determine the true sex. Visualization of a normal infantile cervix through an endoscope may settle the question; however, if there is any doubt, exploratory laparotomy must be done. If internal female organs are absent, the child is a male and repair of the hypospadias may be undertaken. However, if uterus, tubes, and ovaries are found, the child is a female and the external changes are due to endocrine dysfunction, probably of the adrenal cortex (either tumor or hyperplasia). Roentgenograms of the sella tursica, "bone-age" roentgenograms, pyelograms, blood chemistry and sugar tolerance tests, and study of the urinary androgens and estrogens are next in order. If these findings are normal or point only toward the adrenals, many authors recommend perirenal air insufflation to delineate the adrenal outlines. Since this procedure is not without hazard and is often not diagnostic, we have preferred surgical exploration. It is necessary to expose both glands since atrophy or absence on one side has been frequently reported in the literature. Bilateral lumbar exposure at one sitting (as described by Young) has been satisfactory in our hands. If a tumor is found, it may be extirpated; or if simple hyperplasia is encountered, one gland may be removed. We are greatly indebted to Dr. Arthur Grollman, who is recognized as an outstanding authority on the adrenal glands, and who is professor of ex-

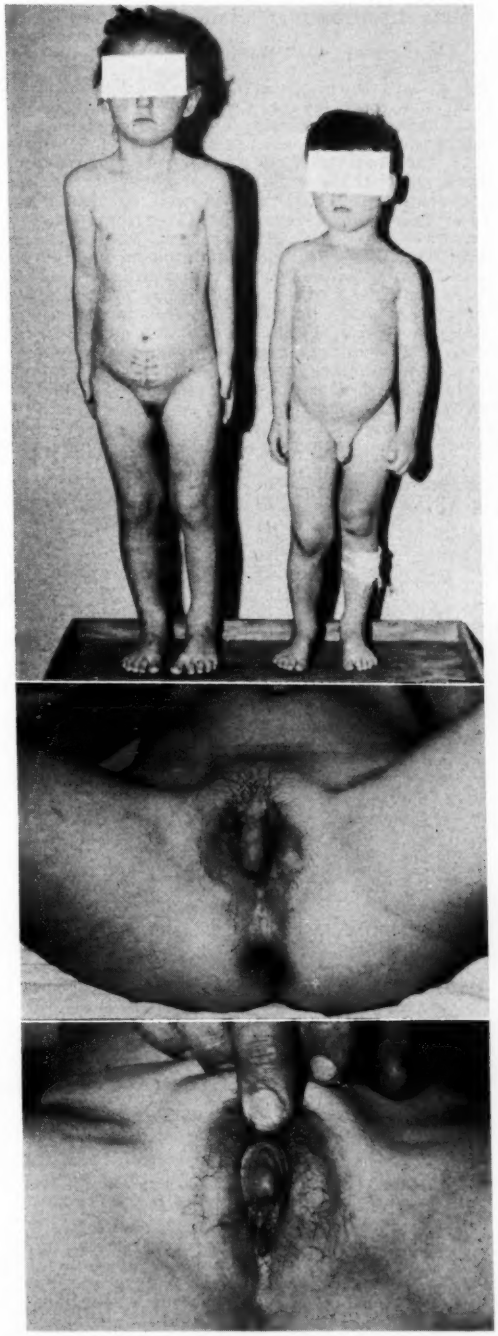

FIG. 4. Upper. Case 6. A girl 2 years and 11 months of age standing beside a normal boy of corresponding age.
Center and lower. Close-up view of genitalia of case 6. Note the hypertrophied clitoris and public hair.

perimental medicine at Southwestern Medical College, for his invaluable assistance in the management of our clinical cases.

Two case reports illustrating pseudohermaphroditism in girls follow:

CASE 5.—A 2½ year old child was seen on April 3, 1946, through the courtesy of Drs. Hugh Leslie and Robert Moore. Delivery was uneventful and the child was regarded as a normal girl at birth with no congenital anomalies. The father, who was the informant in this case, returned from two years' duty overseas, to find that during the preceding three months, the child had developed the external appearance of a boy with a well developed penis, pubic hair, and a deep voice. This impression was concurred in by the grandmother, who dressed the child as a boy. Physical examination showed a 38 pound child whose general appearance was consistent with that of a 5 year old boy (fig. 3, upper). No masses were palpable in the abdomen. The genitalia (fig. 3, lower) showed well developed labia with a markedly enlarged clitoris, 4 cm. long and 1.5 cm. in diameter, beneath which was an apparent vagina. The urethra was not identified. Endoscopy showed a urethral opening just inside the hymen with a normal appearing infantile cervix. Roentgen examinations, including films of the skull, chest,

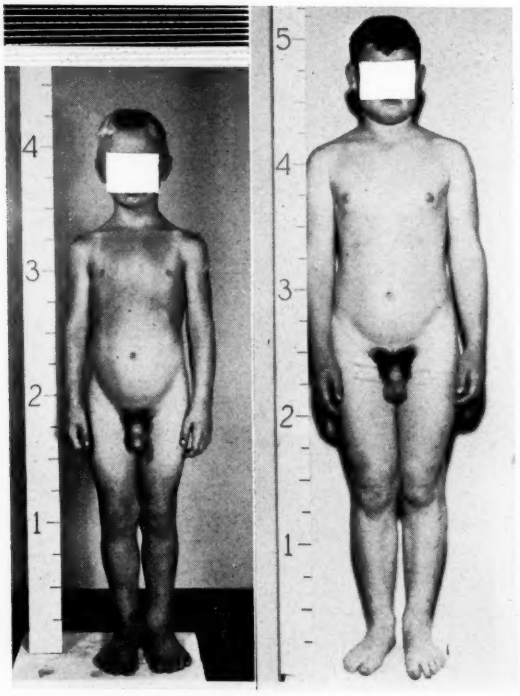

FIG. 5. Left. Case 7. Premature virilism in a 4½ year old boy. Right. Case 8. Premature virilism in a 9 year old boy.

and abdomen, were normal. Roentgenograms of the wrists showed bony development of approximately the fifth year. Intravenous and retrograde pyelograms were normal except that the upper pole of the left kidney could not be visualized. Urinalysis, blood counts, and blood chemistry studies were normal.

Summarizing the case at this point, it was believed that we were dealing with an adrenogenital syndrome characterized by excess androgen production resulting in pseudohermaphroditism in a female, the source of the androgen being probably the androgenic zone in the adrenal cortex—either hyperplasia (most likely on a statistical basis) or neoplasm (consistent with the roentgenograms of the left adrenal area). The resulting changes involved primarily the genital tract without the associated signs of Cushing's syndrome. On May 13, 1946, through the posterior lumbar approach, both adrenals were exposed. They appeared grossly enlarged, but no tumor was found. The left adrenal was removed.

A pathological report by Dr. Frances Love was as follows: "Gross examination: The specimen consists of an enlarged adrenal gland which weighs in the unfixed state 7 Gm. and when fixed 8 Gm. (normal weight of both adrenals together at this age is 4 Gm.). The adrenal gland measures 4.5 by 3 by .6 cm. It is somewhat triangular in shape and appears grossly to be about 4 times enlarged. The surface presents numerous convolutions resembling those of the surface of the brain. The color is bright yellow for the cortex and a brownish yellow for the medulla. In some sections, the cortex and medulla are much thicker than in others. Serial sections taken approximately 3 mm. apart did not reveal any localized tumor masses. Microscopic examination: The sections stained with hematoxylin and eosin reveal the adrenal to be diffusely hyperplastic. The cortical cells are numerous and have fairly normal arrangement into the usual zone with the exception that there is in the inner portion a loosely reticulated, slightly darker staining cellular mass which grossly resembles an androgenic zone of the newborn infant. The medulla is inconspicuous. There are no localized tumor masses and the cells have the normal histologic appearance. Mitoses are infrequent. Pathologic diagnosis: Diffuse hyperplasia of the adrenal gland."

The child made an uneventful convalescence and was discharged on May 25, 1946, with a request that she return in three months for observation and probable excision of the clitoris. The chief value of the operation in this case was the exclusion of neoplasm as the cause of the symptoms. Prognosis is guarded.

CASE 6.—A white child 2 years and 11 months of age was admitted on May 23, 1946. She had been seen several months previously by Dr. Edward White, who made a tentative diagnosis of adrenal tumor. The history revealed that the child was normal until 9 months of age, when the mother noted enlargement of the clitoris and excessive growth of pubic hair. These symptoms had been progressive and the mother had shaved the vulva once a week for the past year. The child had been strong, cheerful, and healthy. Physical examination (fig. 4, upper) showed a pleasant girl of about the size of a 5 year old—weight 41.5 pounds, height 42.5 inches, with the skin of the face covered with acne-form papules such as are found in the adolescent. The breasts were not enlarged. The genitalia were covered with abundant hair. The clitoris was 3 cm. in length and had a well developed glans and prepuce (fig. 4, center and lower). Rectal examination under anesthesia revealed palpable ovaries. Routine laboratory data, including urinalyses, complete blood counts, and blood chemistry determinations, were normal. Twenty-four hour assay of the seventeen ketosteroids in the urine showed 11.0 mg. Roentgenograms of the skull, chest, and abdomen were normal as were intravenous and retrograde pyelograms. The wrists showed a "bone-age" of approximately 8 years.

It was believed that the case was of an adrenogenital syndrome caused by tumor or hyperplasia. However, to exclude arrhenoblastoma of the ovary,

laparotomy was done on May 30, 1946. Both ovaries appeared grossly enlarged with normal uterus and tubes; however, a biopsy of the ovaries showed a normal histological structure for this age. On June 12, both adrenals were exposed through the posterior lumbar approach. They were grossly enlarged, but no tumor could be identified. The left adrenal was removed, and was found to weigh 10 Gm. A pathologic report was essentially identical with that of the preceding case, the diagnosis being "hyperplasia of adrenal." On June 26, the hypertrophied clitoris was excised and a plastic procedure was done to restore the external genital appearance to normal. Convalescence from the combined operations was uneventful, and follow-up examination three months later showed the child to be in good health, but her pubic hair continued to grow.

Premature Virilism in Boys.—With boys showing abnormal virilism, the sex is never in doubt. Excess production of adrenal androgens and growth hormones are postulated as the etiologic factors. The descriptive terms "infant Hercules" or the "burly brewery drayman's helper" best characterize these patients. The diagnostic procedures as previously given are applicable in the complete work-up of these cases. We have encountered two instances of this disorder.

CASE 7.—A 4¼ year old white American boy was admitted to the Texas Children's Hospital on July 17, 1946, through the courtesy of Dr. Frank Brown. History of the case revealed that the child weighed 6 pounds, 13 ounces and was 20.5 inches long at birth. His growth was exceedingly rapid in that at 9 months he weighed 41 pounds, at 3 years 60 pounds, and on his fourth birthday, he weighed 82 pounds. The genitalia were exceptionally large at birth and he had a luxuriant growth of pubic hair at 1 year of age. When 4 years old, the penis and testicles had the appearance of those of an adult. The boy's strength was phenomenal: When he was 3 years of age, it was reported that he could lift his father (who weighed 213 pounds). He had never talked well and seemed to be dull mentally. The general physical appearance was as shown in figure 5, left. His weight was 65 pounds, height 50.5 inches. No abdominal masses were palpable. Laboratory data including urinalyses, blood counts, and blood chemistry determinations were normal. Roentgen studies of the skull, chest, abdomen, and kidneys showed no significant abnormalities. Eye ground examination and neurologic studies showed no evidence of pineal or pituitary tumor.

It was believed that this was a case of premature virilism caused by adrenal cortex hyperfunction. Bilateral exposure of the adrenals showed slight gross enlargement, but no tumor. A portion of the left adrenal was removed, and on microscopic examination showed hyperplasia only. Follow-up examination seven months later showed that the boy had continued to grow. On the chance that an aberrant adrenal might be found intra-abdominally, exploratory laparotomy was done with negative findings. We believe that the prognosis in this case must be guarded and that only the passage of time can give the final answer.

CASE 8.—A 9 year old white boy was first seen by us on December 25, 1945, because of a glandular disturbance. When the boy was 6 years of age, excessive growth of the external genitalia was noted. At that time, general examination had shown no other abnormality. Roentgenograms of the skull and abdomen were normal as were the visual fields. The patient had received stilbestrol for a period of a year, with no effect other than a severe gynecomastia. The genitalia have continued to grow. At the time of our examination the patient was in the fifth grade in school, was well adjusted psychologically, and was of good mentality. He was said to be shy around girls. He was of a sturdy, adult, masculine build (fig. 5, right). The voice was deep but there was no hair on the face or under the arms. No masses could be felt in the abdomen. The penis and testes had the size and appearance of those of an adult, with an abundance of pubic hair of male distribution. The prostate felt like that of a normal adult male. Routine laboratory studies showed no deviation from the normal. Repeated examinations of the visual fields were normal, as were roentgenograms of the skull and adrenal areas. It was believed that the condition resulted from hyperfunction of the adrenal cortex. Exploration of the adrenals to determine the existence of a tumor was considered; but in view of the good general health over a three year period, further observation was decided upon.

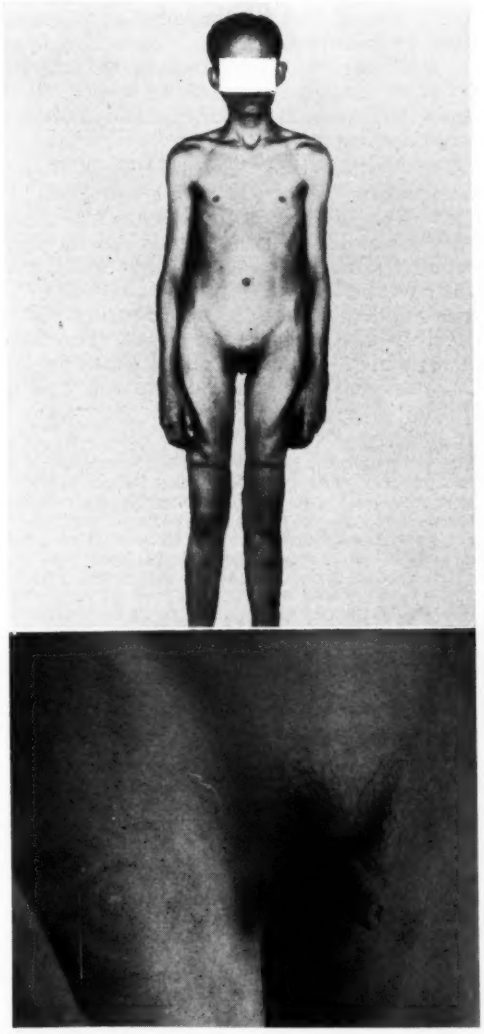

FIG. 6. Upper. Case 9. Hypogonadism in a 21 year old boy. Lower. Genitalia of case 9.

The condition was essentially unchanged one year later, or four years after the onset of the symptoms.

MISCELLANEOUS

Gynecomastia in Boys.—Mammary hyperplasia in boys, often painful (particularly at the time of puberty), is not an uncommon finding. It should be corrected so as to prevent psychic trauma at this vulnerable age. When no associated endocrine abnormality can be demonstrated, we believe that a subcutaneous mammectomy removing the hyperplastic tissue and leaving the nipple intact is the procedure of choice. Cases of this sort in naval personnel handled in this fashion by one of us demonstrated its worth. In our hands, testosterone injections and inunctions have been valueless.

Hypoplastic External Genitalia in Boys.—Parents are frequently concerned about the small size of the child's penis and testes. Since there is a tremendous variation in normal limits both in the child and in the adult, we believe that in the absence of obvious endocrinopathy, reassurance is in order. In the following case of true hypoplasia, which is rare, no cause could be demonstrated and hormonal treatment was unavailing.

CASE 9.—A 21 year old white boy was first seen by us on April 26, 1939, with the complaint of delayed puberty. The voice had only begun to change within the past two years. No pubic hair was in evidence until the boy was 18 years of age, when a scant growth appeared. He had done well in school, had associated normally with boys, and was very bashful around girls. He had never shaved. Physical examination showed a slender lad of pre-adolescent build (fig. 6, upper); height 5 feet, 11 inches, weight 111 pounds. There was no facial or axillary hair. There was no enlargement of the breasts. The heart, lungs, and abdomen were normal. Pubic hair was fine and scant (fig. 6, lower). Neither testicle was palpable; the penis was markedly underdeveloped, measuring only 4 cm. in length when erect. Routine laboratory data were normal; the basal metabolic rate was —21 per cent. The creatinine retention test after the method of Muschat gave variable results.

The sella tursica appeared normal by roentgen ray; and roentgenograms of the long bones showed normal ossification and epiphyseal closure.

The diagnosis of hypogonadism and hypothyroidism was made. The patient was given thyroid extract, and the gonadotrophic hormone derived from pregnant mare serum was administered in daily doses of 20 units for a period of seven months with meager, if any, results. On January 15, 1940, a Torek operation was done on the left testicle (which measured approximately .5 by 1 cm.). Several courses of testosterone by injection and inunction resulted in no appreciable enlargement of the genitalia. When last seen on March 25, 1943, all findings were essentially unchanged except for the presence of a small soft left testicle in the scrotum—a most unsatisfactory response to all forms of indicated therapy.

SUMMARY AND CONCLUSIONS

1. Genital abnormalities of pediatric interest may be divided into two groups: (1) those due to congenital defects of development and (2) those secondary to disturbance of function of the endocrine glands.

2. Hypospadias and epispadias, examples of the former, are amenable to surgical correction.

3. Many so-called hermophrodites in reality suffer from third degree hypospadias.

4. Endocrine dysfunction (usually adrenal cortex hyperplasia or tumor) may result in pseudohermaphroditism in girls or premature virilism in boys. Illustrative cases with their management are presented.

5. Persistent gynecomastia in boys is best corrected surgically.

6. There is a wide variation in size of the normal male external genitalia. A case of true hypoplasia of unknown cause is presented.

ABSTRACT OF DISCUSSION

Dr. Arthur Grollman, Dallas: Knowledge concerning the genital abnormalities observed in childhood has been greatly elucidated by the recent advances in endocrinology. The relatively common minor abnormalities such as hypospadias are actually milder degrees of the same disorder which in its complete form gives rise to hermaphroditism. It is important to differentiate between true precocity, in which the premature pubescence is complete and includes maturation of the gonads, from pseudoprecocity, in which only the external manifestations of sexual maturity are present. The former occurs in association with cerebral lesions; the latter in adrenal tumors. Finally, it should not be forgotten that early but otherwise normal pubescence may appear without any evident pathologic process.

Dr. Michael K. O'Heeron, Houston: This excellent paper by Drs. Spence and Baird has divided the genital abnormalities into two groups, namely, defects of genital development and endocrinologic disturbances. I will confine my discussion to the defects of development of the genitalia.

Hypospadias is commonly encountered in boys, but does not constitute a surgical problem unless one of two conditions is present: (1) a degree of ventral curvature that renders the penis incapable of functioning as a sexual organ, and (2) a urethral opening that is too far back to permit insemination of the sexual partner. As stated by the essayists, both of these conditions must be corrected and should be corrected early in life. I have always advised surgery as soon after 4 years of age as possible. The age at which surgery should be performed is a matter of opinion and the opinions of urologists vary widely. Before the age of 4 years the penis is too small to handle with ease, and surgery is usually more successful if performed before the age of puberty.

To correct the ventral curvature of the penis the authors dissect out the scar tissue. I use the tunnel graft, placing from one to three grafts as may be indicated. At the same time I usually perform a suprapubic cystotomy to divert the urinary stream and permit the wounds to heal by first intention. After from two to four weeks the tunnel grafts can be opened. This is usually done in the office using novocaine local anesthesia. After another wait of about three weeks the last operation, the advancement of the urethra, can be performed. I usually utilize a tongue of epithelium from the scrotum and suture it to a prepared strip of epithelium on the ventral surface of the penis. Then the loose skin over the shaft of the penis, utilizing the prepuce,

is pulled over and sutured in the ventral midline. After about two weeks the cystotomy tube can be removed and the wound usually closes promptly without the aid of a urethral catheter.

Because of the frequent association of hypospadias with other congenital abnormalities, I always examine the urethra and bladder neck by urethroscopy, cystoscopy, and a lipiodal urethrogram. This is to rule out congenital valves and contractures at the bladder neck. The upper urinary tract is usually examined by intravenous pyelography.

Epispadias is rare, and the authors have had a far greater experience in this than I have. Only 1 patient with extrophy of the bladder has come under my care and this was a 2 year old girl twin. The other twin was a boy and normal. I managed the case in the accepted manner: by transplanting the ureters into the sigmoid colon in stages and then excising the bladder and closing the defect in the abdominal wall. I have lost track of the patient and do not have a follow-up on her because I went on active duty in the Army shortly after completing the last stage.

The authors have omitted the discussion of hydrocele and undescended testicles because of the time limitation. Congenital hydroceles are often associated with hernias with loops of gut down in the sac.

Undescended testicles are common. If the testicle is in the abdomen, that is, if it cannot be palpated, an attempt should be made to find it and bring it down surgically as soon as possible to conserve testicular functions. If the testicle is outside the external inguinal ring, treatment should wait until after the age of puberty, because during puberty it may come down. If it does not, surgery is indicated. Hormone therapy merely brings on an early artificial puberty and should be discounted in these cases.

TREATMENT OF UNDESCENDED TESTES

JOHN M. PACE, M. D., M. S., F. A. C. S.
DALLAS, TEXAS

Undescended testis is seen frequently by the genito-urinary surgeon as the condition is usually noted early in life by perplexed parents who bring the child for expert advice. This is fortunate as the condition usually is seen by a physician at a date early enough to insure the child against permanent damage to the testis.

DESCENT OF THE TESTIS

The testis[9] until nearly the end of fetal life is found within the abdominal cavity, at first on the posterior wall of the abdomen at the level of the upper lumbar vertebrae, held in place by a fold of peritoneum called the mesorchium. As the fetus grows, the testis occupies a lower level in the abdominal cavity; in the third month it lies in the iliac fossa and at the seventh month near the abdominal inguinal ring. Concurrently a blind pouch of the peritoneal membrane, the processus vaginalis, grows downward and medially through the anterior abdominal wall toward the scrotum and the testis with its mesorchium enters the processus vaginalis and descends within it until the scrotum is reached. At a later date, the connection between the processus vaginalis in the scrotum and the abdominal cavity becomes lost by the obliteration of the upper part of the pouch.

The gubernaculum testis must be mentioned in considering the descent. The gubernaculum arises from a peritoneal fold stretching from the inguinal region to the Wolffian duct and inferior end of the mesonephros. This peritoneal fold is joined from above by another less marked fold which extends downward from the inferior end of the testis, and within these two folds smooth muscle and fibrous tissue arise, giving origin to a continuous band or ligament, the gubernaculum testis. The gubernaculum shows its greatest development about the sixth month, is rounded and cordlike, and is attached above to the lower end of the testis and below near the inguinal region. In the lower part of its course it is partly covered by the peritoneum of the processus vaginalis. As the testis enters the processus vaginalis the gubernaculum atrophies, but at birth a short part of the gubernaculum may still be found passing downward toward the inferior part of the scrotum. Some anatomists consider the movement downward of the testis due, in part, to a pull by the gubernaculum as it atrophies.

PHYSIOLOGY OF TESTIS

The testis has two functions, one concerned with the production and development of spermatozoa, the other with an internal secretion or hormone. The first function is carried out by the sustentacular and sexual cells lining the tubules, and the second by the interstitial cells of Leydig.

The sexual cells undergo a process called spermatogenesis. Development passes through five stages: (1) the most immature cell, the spermatogonia; lying next to the basement membrane of the tubule and above are the (2) primary spermatocytes, (3) the secondary spermatocytes, (4) the spermatids, and (5) the spermatozoa.[13]

The interstitial cells of Leydig are responsible for the secondary sexual characteristics. If the testes do not descend into the scrotum, the spermatogenetic powers invariably fail, but the secondary sexual characteristics are well developed and the sexual desire may be above the average. The available evidence supports the theory that the interstitial cells of Leydig are responsible for the sex characteristics.[12]

FAILURE OF PROPER DESCENT

The testis may be arrested at any point in the normal course followed from within

From the Department of Urology, Southwestern Medical College.
Read before the Section on Surgery, State Medical Association of Texas, Annual Session, Dallas, May 7, 1947.

the abdomen to the most dependent portion of the scrotum. Within the abdomen the testis may be found just within the internal ring or in the iliac fossa. The most common site of arrest, however, is within the inguinal canal. The cause of the failure of the testis to descend to its normal scrotal position is not well understood. Eccles[10] has given the following conditions as factors:

1. The mesorchium may be too long. The testis then hangs too freely within the abdominal cavity and thus is prevented from engaging in the opening of the internal ring.

2. Adhesions may have formed between the peritoneum of the mesorchium and the visceral or parietal peritoneum.

3. The spermatic vessels may be too short.

4. There may be a deficiency or absence of the lower or scrotal attachment of the gubernaculum.

Certainly, however, in operations to correct this deformity, shortness of the spermatic vessels offers the greatest obstacle to placing the testis in the scrotum and the success of any operative procedure depends primarily upon increasing the length of the cord sufficiently to permit the testis to enter the scrotum.

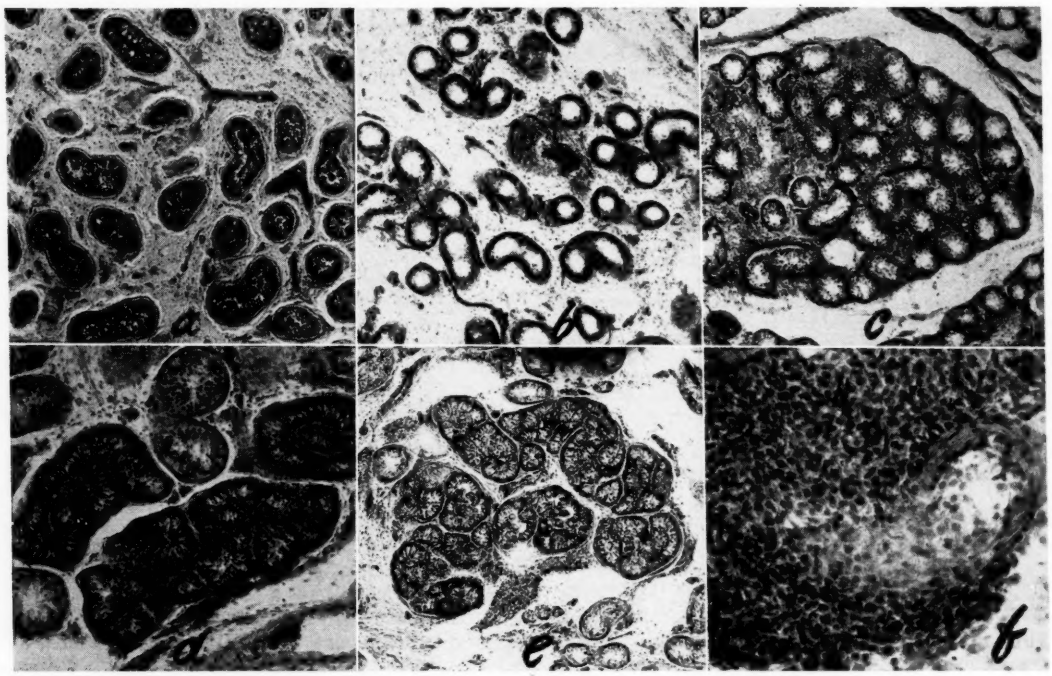

FIG. 1*a*. Age. 22. Photomicrograph of a right inguinal testis showing the histology of a normal testis. x 35.

b. Age 22. Photomicrograph of a right inguinal testis showing partial atrophy and reduction in the caliber of the tubules. x 35.

c. Age 35. Photomicrograph of a left inguinal testis grossly one-half normal size showing atrophic tubules with a diffuse increase in interstitial connective tissue. x 35.

d. Age 21. Photomicrograph of a left inguinal testis which was one-fourth normal size. The germinal epithelium is active. A grade 1 adenocarcinoma appears beneath the tunica albuginea. x 65. [After Pace and Cabot: Surg., Gynec. & Obst. 63:16-22 (July) 1936.]

e. Age 27. Photomicrograph of a left inguinal testis showing atrophic tubules and a small circumscribed lesion beneath the albuginea. Grade 1 adenocarcinoma. x 35. [After Pace and Cabot: Surg., Gynec., & Obst. 63:16-22 (July) 1936.]

f. Age 67. Photomicrograph of a right abdominal testis. The section shows interstitial cells with large nucleoli apparently originating in the tubules. x 150. [After Pace and Cabot: Surg., Gynec., & Obst. 63:16-22 (July) 1936.]

INCIDENCE

At birth, by far the vast majority of testes are found within the scrotum and many of those undescended at birth will descend during the first year of life. An unknown percentage of those remaining hidden from view after the first year will descend spontaneously before the age of puberty.

The War Department[23] found 3.1 per 1,000 men examined in World War I to have undescended testes. I have seen no statistics from the last war.

Bilateral cryptorchidism is more uncommon than unilateral. In Coley's[6] group of cases, 238 were right sided, 188 left sided, and 55 bilateral.

HISTOLOGIC PICTURE OF RETAINED TESTES

Rawlings[18] in 1908, described the histology of a series of undescended testes. Many showed an increase of interstitial fibrous tis-

sue with imperfect tubular epithelium and absence of spermatogenesis.

Southam and Cooper[19] examined 10 retained testes from children and controls consisting of scrotal organs of the same age from autopsies, and the picture of the retained testis was found to be quite similar to the scrotal organ in early childhood.

Wangensteen[22] described scrotal and undescended testes before puberty as being very similar histologically. These findings have been verified by other observers.

In an earlier paper[17] based on a study of 24 cases of retained testes in the adult, the histologic pictures suggested that the testes in patients through the fourth decade of life should function if placed in the scrotum (fig. 1a, b, c). In the same series 3 examples of carcinoma were found. Two of these were in the third decade, and one in the seventh decade (fig. 1d, e, f). This further strengthens the opinion that the abnormally placed testes is much more likely to develop cancer than the normally placed organ.

Crew,[8] in 1922, reasoned that the degeneration of the tubules of the undescended testis was due to the difference in temperature between the intra-abdominal or inguinal position and the scrotal position. This theory was subsequently verified by Carl R. Moore[14] and his associates using rats, rabbits, guinea pigs, and sheep, and attention was called to the heat regulatory mechanism of the scrotum. Contraction of the scrotum in cold weather brings the testes closer to the body, while in hot weather the scrotum relaxes to remove the testes farther from the source of heat.

ASSOCIATED HERNIA

It is generally recognized that the undescended testis is often associated with an actual or potential hernial sac. Moschkowitz[15] believed that the association is 100 per cent while Odiorne and Simmons[16] reported actual hernias in 57 per cent of their cases, and of these, 10 were strangulated. Walters[21] and Counseller[7] found the incidence to be 76 per cent, and in a previous report[17], I described 22 hernias in a series of 24 adults.

DIAGNOSIS OF UNDESCENDED TESTIS

The diagnosis of an undescended testis depends upon its absence from the scrotum and its palpation in the inguinal canal or not at all. A bulge may be present in the inguinal canal or external ring, which may contain the testis as well as a hernial sac. In the event that no testis is palpable it is safe to assume that the organ is within the abdomen. The scrotum on the affected side is very poorly developed (fig. 2).

In examining young children it should be remembered that if the child becomes frightened and cries, the cremaster muscle may retract the testis upward above the level of the external inguinal ring, and, at times, into the abdominal cavity. Overlooking this fact in a child with a well developed scrotum may lead to an erroneous diagnosis.

The distinction between strangulation of a hernia accompanying an undescended testis, acute epididymitis, or torsion of the cord may be difficult. Operation is imperative, not only to relieve the possible strangulated hernia but to prevent infection which may follow torsion or epididymitis from entering the peritoneal cavity through the hernial sac.

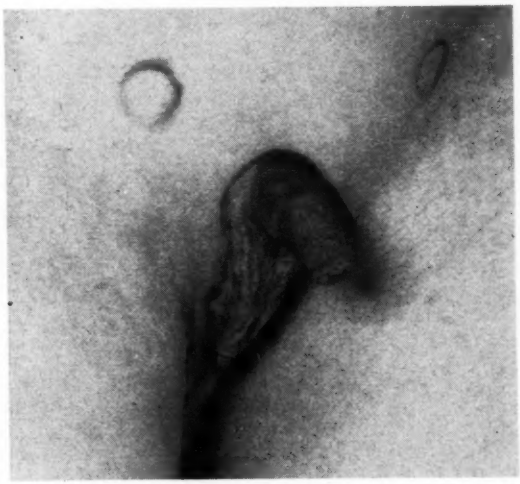

FIG. 2. A 10-year old boy with bilateral inguinal testes as shown by the circles. The scrotum is underdeveloped and atrophic. The penis is overdeveloped, possibly from administration of much anterior pituitary extract.

TREATMENT OF THE RETAINED TESTIS

A testis which is not in its normal position fails to develop and does not produce spermatozoa after puberty. It is liable to injury, is usually accompanied by hernia, and the chances of malignant changes are importantly greater. That it is desirable for the testis to be well within the scrotum before puberty is not disputed by physicians. There are three types of treatment to be mentioned: (1) the most important, surgery; (2) entirely expectant; and (3) the use of the anterior pituitary hormone.

Surgical Treatment.—I shall not attempt to present a historical review of the development of surgical procedures advocated for the correction of the abnormally placed testis. Orchiopexy is the procedure to be employed in the young adult and child; orchec-

tomy is usually reserved for the adult past the fourth decade of life.

Opinion varies as to the optimum age for orchiopexy. Certainly if hernia exists the problem is one for early surgery. The operative approach may be elected at any time past the age of 3 as after this age the child is not likely to soil the incision. Cabot and Nesbit[4] believed that orchiopexy "had best be performed before the age of nine."

Many techniques for bringing the testis to the scrotum may be found in the literature. A. D. Bevan,[1,2] in 1899 and 1903, described a method of orchiopexy which became widely used. Bevan pointed out that the structure which prevented the placing of the testis in the scrotum was the spermatic artery, and he lengthened the vessel as much as possible by separating the bands of fibrous connective tissue. Objections to Bevan's operation were (1) a purse string suture at the scrotal neck which may interfere with the circulation in the testis, and (2) division of the spermatic vessels in those instances in which the vessels could not be lengthened sufficiently to place the testis in the most dependent position of the scrotum.

Torek,[20] in 1909, described a method of securing the testis in the bottom of the scrotum. The testis, after being placed in the scrotum, was sutured to the fascia lata of the thigh, and at a later operation, the testis was freed from the thigh. The incision is the same as for the repair of an inguinal hernia—skin and external oblique fascia are incised and the testis freed after dividing

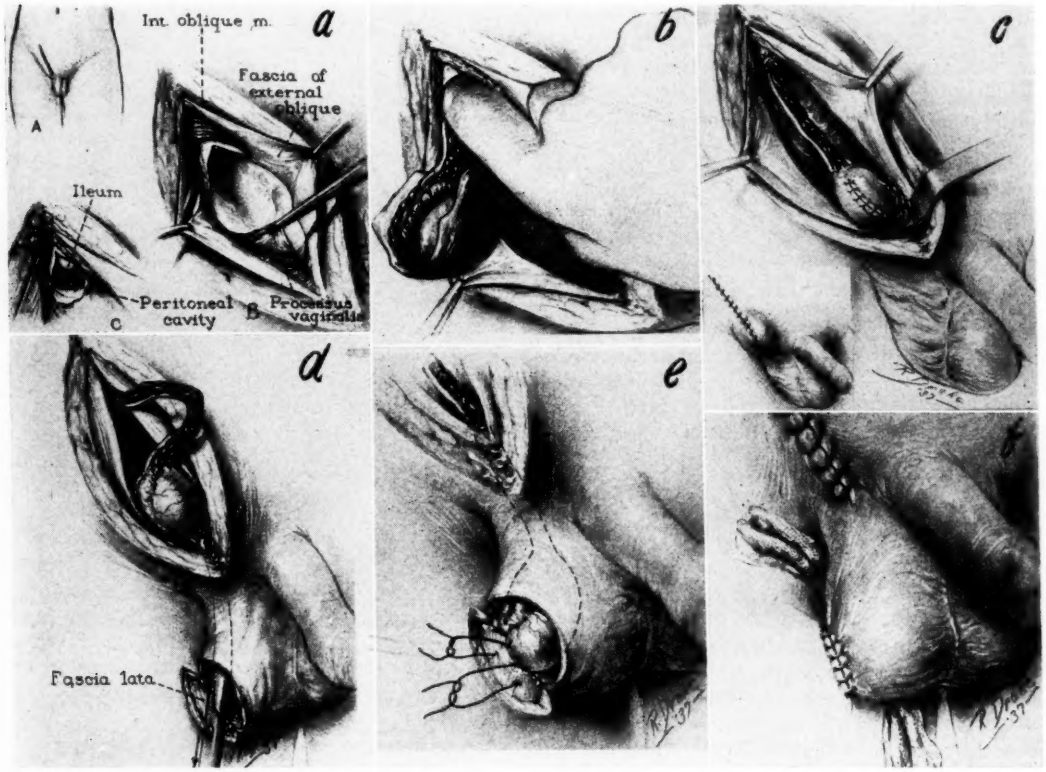

FIG. 3a. Multiple stage operation for abdominal cryptorchism: *A.* The site of Incision. *B.* the empty hernial sac open and the point of division of the fibers of the internal oblique muscle indicated by a heavy line. *C.* The muscles divided, the incision in the hernial sac extended upward, freely opening the perineal cavity, and a coil of ileum shown where it is likely to appear. [After Cabot: J. Mt. Sinai Hosp. 4:596-613 (March-April) 1938.]

b. Drawing showing the importance of free mobilization of the spermatic cord from the peritoneum and retroperitoneal tissues by blunt dissection. Note the cuff of peritoneum left attached to the testis for use in reconstructing a tunica vaginalis. [After Cabot: J. Mt. Sinai Hosp. 4:596-613 (March-April) 1938.]

c. Drawing showing the method of attaching the testis to the posterior wall of the canal, the reconstructed tunica vaginalis and (in insert) the position of the testis at the end of the first stage of the operation. [After Cabot: J. Mt. Sinai Hosp. 4:596-613 (March-April) 1938.]

d. Drawing showing relationships at the second stage of the operation after the testis and cord have been freed, the posterior lip of the scrotal incision sutured to the superior lip of the incision in the thigh, and the testis about to be drawn down for suture to the fascia lata. [After Cabot: J. Mt. Sinai Hosp. 4:596-613 (March-April) 1938.]

e. Drawing showing placement of sutures in the scar tissue below the testis and through the fascia lata. [After Cabot: J. Mt. Sinai Hosp. 4:596-613 (March-April) 1938.]

f. Drawing showing condition at the end of the second stage of the operation. [After Cabot: J. Mt. Sinai Hosp. 4:596-613 (March-April) 1938.]

the gubernaculum (fig. 3). The processus vaginalis is stripped from the testis and the upper end treated as a hernial sac. The spermatic cord is freed from the peritoneum and lengthened. The cord may be further lengthened by tedious dissection of the adjacent fibrous connective tissue and the possibility of injury to the spermatic artery may be reduced by carrying out the dissection, at this stage, by transillumination of the cord. The small spermatic artery is more easily seen than palpated.

In 1931, Cabot and Nesbit[4] described a method of temporary fixation of the testis to the most dependent portion of the scrotum by means of constant traction. A skin incision is made, extending from the neck of the scrotum to the internal inguinal ring. The inguinal canal is opened in the usual manner. The cord and testis are exposed and freed. The processus vaginalis is dissected from the structures of the cord and dealt with as a hernial sac. The cord is freed of the many bands of fibrous connective tissue—bands which produce much of the shortening—to the level of the internal ring. The cord may be further freed through the internal inguinal ring. A finger is pushed into the scrotum to stretch that structure enough to receive the testis. A catgut suture is passed through the remains of the gubernaculum and brought out at the most dependent portion of the scrotum. The suture is then fastened to a wire frame and rubber band so as to produce a constant, gentle traction. (Instead of the metal crutch I have fastened the suture to the opposite thigh with adhesive tape [fig. 4].) The inguinal incision is closed by any method to give the greatest length to the cord. The traction is left in place for ten or twelve days, being adjusted daily so that constant pressure is applied. These authors further reported that in some cases in which the testis can be brought only to just below the external ring, the testis descends well into the scrotum after a few days of traction. The principle involved in this technique is the permanent lengthening of the vessels by constant stretching.

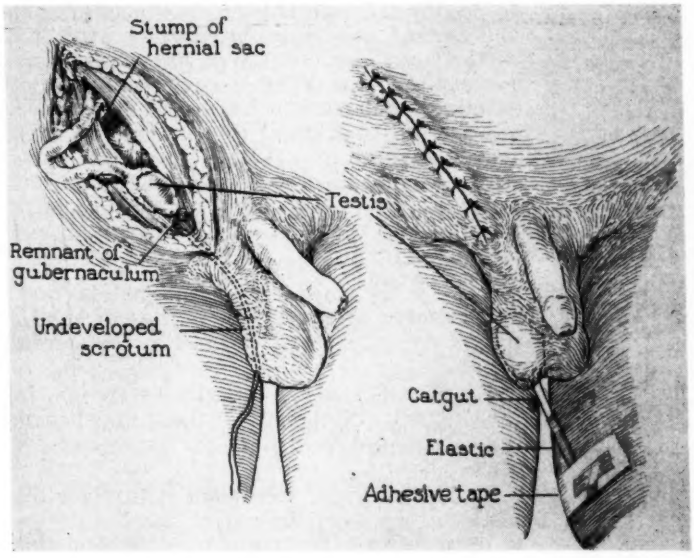

FIG. 4. Drawing of the Cabot method of maintaining constant traction to lengthen further the cord.

I have used the Torek and Cabot procedures in a recent series of 15 cases, 1 a bilateral inguinal condition, 1 a bilateral abdominal, 2 left abdominal, 4 left inguinal, and the remainder right inguinal. The youngest patient operated on was 3 years of age and the oldest 29. In each of the 15 patients a hernial sac was present.

CASE REPORTS

CASE 1.—Examination of M. M., a white boy, age 10, disclosed both testes to be at the level of the internal ring. For the past three months 200 rat units of anterior pituitary extract had been given twice each week, in the outpatient department.

A right Torek operation was first performed July 8, 1938, with good results. The testis was found on the abdominal side of the internal ring. The patient was not seen again for twelve months, at which time the right testis was detached from the thigh and the left testis, also on the abdominal side of the internal ring, was brought to the scrotum by the Cabot-Nesbit procedure.

CASE 2.—Examination of L. B., a white boy, age 18, disclosed a slightly palpable testis just within the left internal ring. At operation the testis, located in the internal inguinal ring, was brought to the midscrotum and traction applied as described by Cabot and Nesbit. Twelve days later the testis was in the most dependent portion of the scrotum.

CASE 3—R. C. F., a white boy, age 17, stated that he had no left testis but at times could feel a lump in the region of the left inguinal canal. Examination disclosed a bulge in the inguinal canal but no testis was palpable.

As mentioned previously, orchectomy is usually reserved for those patients past the fourth decade of life. An exception was made in this case.

At operation a small testis was located on the abdominal side of the internal ring and densely adherent to the parietal peritoneum. The cord was incorporated in the peritoneum. The testis was removed. A separate hernial sac which measured 6 x 5 cm. was treated in the usual manner. Sections of the excised testis disclosed well developed tubules.

CASE 4.—Examination of R. R. W., a white boy,

age 5, disclosed no testes in the scrotum nor any suggestion of one in either inguinal canal. This patient had received elsewhere an unknown amount of anterior pituitary extract over a period of nine months.

The left inguinal canal was explored and no testis found. The peritoneum was opened and a rudimentary testis was found in the left iliac fossa. The spermatic vessels were freed of peritoneum and lengthened. The testis was brought downward to the level of the external inguinal ring (Cabot method). A separate hernial sac at the internal ring was excised, the peritoneum closed, and the fascia closed anterior to the spermatic vessels. In from twelve to eighteen months the left testis will again be operated upon and brought to the scrotum as the vessels will elongate considerably in that period of time.

CASE 5.—Examination of N. V., a white boy, age 11, disclosed a left atrophic scrotum. A bulge was palpated in the left inguinal canal.

At operation the sac containing the testis was found anterior to the fascia of the external oblique. The sac was opened, the spermatic vessels freed enough to place the testis in the scrotum and fasten it to the fascia lata of the thigh (Torek). The sac was dealt with in the usual manner.

Expectant Treatment. — As previously mentioned, many of the undescended testes descend spontaneously through the age of puberty. If no hernia exists, no great harm may follow expectant treatment, provided, of course, that the testis is brought down before puberty is well developed.

Anterior Pituitary Hormones.—Engle,[11] in 1932, found that in monkeys the descent of the testes could be accelerated by treatment with the anterior pituitary hormone. Following this, many reports in the literature were encountered describing beneficial results in children. Cohn[5] reported great results with this type of hormone. He described a case of testicular descent six hours after the administration of the anterior pituitary-like substance. For me, it is difficult properly to evaluate this form of treatment, as testes may descend spontaneously throughout the prepuberty age. In some children so treated, hypertrophy of the external genitalia and secondary sexual characteristics appeared early.

SUMMARY

Children with undescended testes are often seen by physicians at an early date as anxious parents seek advice. This insures the child against neglect and permanent damage to the testis.

The testes until near the end of fetal life are abdominal organs. At birth the testes should be found within the scrotum although many undescended at birth will descend during the first year of life and until the age of puberty. The retained testes are associated with a hernial sac which varies considerably in size.

The reasons for failure of the testes to descend properly are not clear-cut but probably shortness of the spermatic artery is the greatest single factor. The incidence in adults has been found to be 3.1 per 1,000.

The testis has two functions: (1) production of spermatozoa and (2) production of the male hormone. The spermatozoa are made by the tubules and the hormone by the interstitial cells of Leydig.

Histologically, a retained testis is indistinguishable from one normally placed up to the age of puberty; however, past this age, the retained testis does not produce spermatozoa, and the incidence of malignancy is greatly increased.

The diagnosis is usually simple; however, caution should be exercised in forming an opinion in a crying child, as the cremaster muscle quite often retracts the testis upward and into the inguinal canal.

Treatment is directed at causing the testis to occupy its normal position not later than the age of puberty. Orchiopexy after the method of Torek or Cabot has given satisfactory results. The use of the anterior pituitary preparations has found many advocates since the original observation of Engel; however, there are, certain objections to its use, such as hypertrophy of the penis and early secondary sexual characteristics occasionally seen in young boys.

CONCLUSIONS

1. The retained testis does not produce spermatozoa and the possibilities of malignancy are much greater than in the scrotal organ.

2. The incidence of retained testes is approximately 3.1 per 1,000 men, and hernia is present in a very high percentage of the cases.

3. The object of treatment is to place the testis in the most dependent portion of the scrotum before the age of puberty, and this may well be done by orchiopexy, using the method described by Torek or Cabot and Nesbit.

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ABSTRACT OF DISCUSSION

Dr. B. W. Turner, Houston: The completeness of this paper leaves little for me to discuss.

The treatment of the undescended testis is primarily surgical. The condition associated with hernia is always surgical, and should be operated upon rather early, that is, when the patient is from 3 to 6 years of age. The expectant method may be employed when hernia is not present to any degree and the testis is high in the inguinal canal or in the abdomen. A certain number will descend spontaneously before the age of puberty, but it should be remembered that surgery must be resorted to before puberty unless descent has been sufficient.

The medical treatment with anterior pituitary hormones possibly has a place in the care of such patients, but in my hands it has been futile. I do not agree with pediatricians who in many instances give too large amounts over too long a period of time. Harm can arise in the excessive use of the anterior pituitary hormones, as has been proved in experimental and clinical use. Prematurity in sex development and early fusion of the long bones makes a change in the stature of the patient. This treatment is contraindicated in cases of hernia or past the age of puberty. Where excessive units are given, atrophy or degenerative change can take place, and excessive fibrous tissue change about the testis may occur.

The age limits of such therapy may be set arbitrarily at from 4 to 12 years; the amount of the hormone at from 2,500 to 3,000 units over a period of two or three months. Should no result be in evidence, the treatment should be discontinued and surgery advised.

The ectopic testis is one that lies outside the path of the normal descent. It is always a surgical problem for correction.

The prevalence of undescended testes is quoted variously as from 3 to 4 per 1,000 males. The prevalence of cancer in the undescended testis is much enhanced, as has been proved by statistics. Of 245 cases of tumor of the testis reported by Dean, 35 were in undescended testes, most of them retained in the abdomen. Undescended testes are subject to the same diseases as are found in normal testes. Sometimes the differential diagnosis is not easy.

The surgical treatment is orchiopexy. The condition should be operated upon one side at a time when occurring bilaterally. The choice method in my hands has been the Torek operation with possibly a few alterations, depending somewhat on the age of the patient and the location and condition of the testis and cord.

Dr. Vincent Vermooten, Dallas: May I emphasize what Dr. Pace said in regard to the frequency of malignant changes in undescended testes? I also want to point out that a successful orchiopexy is no guarantee that the testis will not become malignant. I have removed an embryonal carcinoma of the testis in a man 23 years old which had occurred in a testis on which a successful orchiopexy had been done eleven years previously. I have also found an embryonal carcinoma in a testis which had been undescended but had descended spontaneously thirteen years previously when the patient was 12 years old. As a result of these experiences, I believe definitely that if the patient has an abnormal testis, unless the cryptorchism is reasonably normal and the cord can be adequately lengthened, it should be removed. A small, atrophic, undeveloped, and congenitally abnormal undescended testis should not be put in the scrotum; it will be of no functional value and is potentially malignant to a high degree.

I agree with Dr. Pace that the Torek operation is far better than the Bevan type of operation if the testis is wanted in the bottom of the scrotum. However, I have recently published* a new one-stage technique for doing an orchiopexy. The end results are as good as any that can be obtained by the Torek procedure, primarily because of the method of preparing the scrotal bed.

*Vermooten, V: Orchidopexy: New Modification of Bevan Technique, J. Urol. 57:310-318 (Feb.) 1947.

ALLERGY OF THE GASTRO-INTESTINAL TRACT

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From pediatrics to geriatrics allergy of the gastro-intestinal tract is common and frequently overlooked. From the lips to the anus, symptoms and findings may imitate organic disease. Now that bubble gum is in vogue, celitis, stomatitis, and contact dermatitis of the circumoral area are encountered with increasing frequency

Probably the earliest and one of the most frequent symptoms of gastro-intestinal allergy is the colic of infants. Pediatricians have for many years appreciated this trying manifestation, not only in the bottle-fed baby, but from foods transferred in breast milk. Esophageal spasm, cardiospasm, and pylorospasm may provoke vomiting, either by direct contact from food and drugs or from antigens circulating in the blood stream. Pain in the abdomen, distention, nausea, and flatulence are commonly encountered in the allergic person and at times may be associated with or imitate organic disease, necessitating thorough exclusion by chemical and roentgen study. Ulcer-like pain, exacerbations of healed ulcers, cramps, diarrhea, colitis, Henoch's purpura, pruritis ani, and gallbladder symptoms may have as their origin true allergic reactions.

To list all of the symptoms and their order

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of frequency cannot be accurately accomplished. Allergic reactions may simulate disease entities such as pylorospasm, cyclic vomiting, peptic ulcer, and cholecystitis.

When concomitant allergies exist, the explanation of atypical reactions in the alimentary tract may be properly correlated. For example, when egg is eaten and nausea and vomiting and diarrhea coexist with sneezing and asthma, the picture is easily appreciated.

Statistically correlation of functional symptoms is difficult and frequently inaccurate. Rachemann[5] expressed the belief that gastro-intestinal allergic symptoms are rare, while Rowe[9] expressed doubts that its frequency is properly appreciated. It has been my experience that many patients with respiratory allergies also have abdominal symptoms which are considered secondary because of the severity of the chief complaint. Certainly, in the infant and preschool child hypersensitivity is a common source of trouble to the pediatrician. In adults, however, pure gastro-intestinal allergy is frequently overlooked and presents a problem that taxes the physician's diagnostic acumen.

A differentiation should be made between food allergy and gastro-intestinal allergy. Food is one of the most common antigens that provoke symptoms; however, drugs, biologicals, antibiotics, and infective agents may be at fault. Foods, on the other hand, have been known to precipitate asthma, hay fever, urticaria, headache, and other allergic manifestations in the absence of disturbance to the alimentary system.

ETIOLOGY

Careful histories will frequently elicit hereditary tendencies toward allergy; however, certain patients apparently have acquired hypersensitivity. In the presence of the respiratory allergies, the immediate wheal reaction typifies antigen antibody mechanism. Walzer[11] has demonstrated this phenomenon in the mucosal cells of the hollow viscera by direct contact or by circulation in the blood. The patients who show immediate symptoms, such as a reaction within from fifteen to sixty minutes after the ingestion of food, usually fall into the group with the best skin responses, particularly when associated with respiratory allergies. This is in contrast to the so-called delayed type of reactions (from one to seventy-two hours),[1] in which skin testing affords little, if any, information.

Positive skin tests may be interpreted in three ways: (1) positive reaction may parallel clinical symptoms; (2) clinical sensitivity no longer exists even though positive; and, (3) the skin alone has become sensitized.[10] Inconclusive evidence points to the hypothesis that some of the reactions may be delayed, the allergic response being analogous to the tuberculin-like sensitivity.[2]

Any ingested or parenterally injected substance may provoke symptoms of gastro-intestinal disturbance in a sensitized person. It is the opinion of most observers, however, that the abdominal symptoms of migraine are cortical in origin.

No satisfactory explanation of the onset of symptoms from foods tolerated for years has been advanced. It is believed by some authors to be on the basis of changes in the permeability of the tract.

Food is the most common source of trouble and by far the most difficult to evaluate. How many can accurately list all of the foods that they have eaten the past twenty-four hours, if a so-called normal diet has been followed? Even when what was eaten is recalled, things may not be what they appear. Tomato juice is frequently added to hamburger meat to give it a uniform red color; rye bread contains from 30 to 50 per cent wheat; noodles may have no egg, deriving their yellow color from dyes; pink coloring matter may contain phenolphthalein; tuna fish is packed in cottonseed oil; oleomargarine is a source of peanut antigen; "nuts" on cakes and salads frequently are ground soy beans.

Acetylsalicylic acid (aspirin) is probably responsible for more allergic reactions than any other drug. Rectal suppositories may contain corn starch or cocoa butter. Estrogens, adrenalin in oil, and the new drug, Bal (British anti-Lewisite) are prepared in peanut oil. Many peanut sensitivities are being provoked by the use of penicillin in wax, which also contains peanut oil.

PATHOLOGY OR DISTURBED PHYSIOLOGY

The mucous membranes of the gastro-intestinal tract become edematous and hyperemic, resulting in exudation of fluid and cells and spasm of smooth muscle. As the process of allergy tends to reverse itself, the eosinophil may be a dominant finding. During this process, motor and secretory functions may have been altered considerably, producing hyperperistalsis and spasm. Hypersecretion and increased mucus are common, particularly with involvement of the colon. Years ago a number of clinicians reported low free hydrochloric acid in the allergic person. Loveless,[3] in 1936, apparently changed this opinion for all time.

Roentgen studies are not diagnostic for allergy; however, when the antigen is given with barium, pylorospasm, hyperperistalsis,

segmentation of the small bowel, and spastic type of colon can be observed, usually depending on the site of the sensitivity.[2]

DIAGNOSIS

In the absence of coexisting allergies, symptoms of the gastro-intestinal tract may provoke extensive investigation, including roentgen ray evaluation, cholecystograms, and chemical determinations, and rightly so, because organic pathologic conditions must be excluded before a functional diagnosis can be made.

On many occasions, elective and even emergency surgery has been employed in an effort to relieve vague patterns of pain and disturbance of physiologic functions. The surgeon should note local angioneurotic type of edema or urticarial lesions of any portion of the intestinal tract and admit his negative pathologic findings so that the patient may follow diagnostic endeavors to reveal the provoking antigens. This type of case is best exemplified by the so-called "chronic appendix" that shows no pathologic changes under the microscope, in which there is a return of symptoms after the patient resumes a general diet.

When symptoms are not typically diagnostic, epinephrine in a 1:1,000 dilution may reverse the picture and effect relief without surgery. This phenomenon has been demonstrated in 50 per cent of the patients with acute abdominal crises of allergic origin. It is my opinion that benadryl and pyribenzamine should now be used in conjunction with epinephrine as a diagnostic therapeutic approach.

The process of spasms of the smooth muscle of the intestine, with local wheal formation and blood vessel spasm, may progress to such an extent that a true pathologic lesion such as appendiceal changes or intussusception may necessitate surgical intervention, and such processes are not reversible unless therapy is employed very early.[7]

When there exist organic pathologic conditions that are resistant to the accepted forms of therapy, careful evaluation of that treatment should be considered. For example, duodenal ulcers may be kept active or even be made worse in a patient sensitive to milk, usually the chief ingredient in the management of such a lesion.

Protein skin tests with foods in my practice give little information in gastro-intestinal allergy, even when respiratory allergies are present or when immediate wheal response is anticipated, as in the patient who is aware of immediate symptoms of "indigestion" or "dyspepsia." Nevertheless, the patient has not been adequately studied unless thorough testing is accomplished, because valuable leads may be afforded by responses to certain groups of foods, and observation may be focused on those particular groups.

The majority of patients who do not give a history of positive symptoms soon after eating certain foods will not show positive skin tests, and evaluation and approach must be along other lines. When a patient presents himself with bizarre symptoms, atypical of organic disease and classified as functional, and skin tests provide no information, the approach is through food diary. In this manner, the patient is allowed to maintain adequate nutrition while his eating habits are studied. Bowen and Rinkel have devised a food and symptom diary that may be used to correlate the time a food is taken in relation to the clock, frequency of ingestion of suspected trouble makers, and adequacy of vitamins and minerals. The timetable portion of the chart is for correlating symptoms plus any unusual circumstances, such as psychic disturbances and unusual incidents that may provoke symptoms. Spaces for medication and weather phenomena are also provided.

With this chart elimination of possible offending foods or drugs may be accomplished in a scientific manner, at all times with cognizance of the nutritional, vitamin, and mineral intake of the patient. It has been brought to my attention many times that to tell a patient to avoid a food such as milk does not constitute complete elimination of that antigen, and, to offset this factor, printed reports of the presence of milk and its products in foods are supplied for more thorough education of the patient in maintaining a milk-free program.

The diagnostic individual food test after Rinkel[8] and Randolph,[6] involving the use of the leukopenic index, has been a keen disappointment in the investigation of my gastro-intestinal patients.

The laboratory evaluations of mucus and secretions from the stools and sigmoid for eosinophils has been discarded from my routine because the majority of the cases will prove to be negative. A positive response, however, is significant in the absence of parasitic disease.

The ultimate diagnosis is finally made by the disappearance of the symptoms producing antigen, be it food, drug, or biological product. The reproduction of symptoms when the product is reemployed fulfills the postulates of the allergic reaction by provoking the same characteristic adverse response.

CASE REPORTS

CASE 1. *Polysurgery in an Allergic Patient.*—C. E., a physician's wife, aged 47, came with a com-

plaint of abdominal distress for twenty years, periodic sick headaches, and perennial itching of the nose and eyes, with occasionally marked symptoms of hay fever.

Following an appendectomy at 37 years of age, the patient failed to obtain relief from abdominal distress. The diagnosis was chronic appendicitis. Four years later, cholecystectomy brought some improvement in her condition. In the interval between the two operations, the chronic abdominal disturbance was diagnosed as peptic ulcer.

Questioning the patient revealed no history of an acute attack of appendicitis preceding the symptoms of chronic appendicitis. No relief was derived from eating, soda, emesis, cathartics, heat, or rest. The abdominal symptoms increased with the ingestion of milk. At times there was mucus in the stool.

The patient was found very sensitive to milk and to a number of other foods. These were removed, with the result that the abdominal symptoms disappeared. It was found by trial that a teaspoonful of milk was sufficient to reproduce abdominal symptoms and headaches. The patient can now tolerate daily as much as 6 ounces of super-heated milk. If more is used, however, a congestion of the nose, fullness in the upper abdomen, or headaches will occur.

This report demonstrates how frequently patients are subjected to polysurgery before the diagnosis of allergy is made.

CASE 2. *Pylorospasm Due to Food* (presented by courtesy of Drs. C. Pounders and R. Bowen).—J. H., aged 3 years, was first seen by a pediatrician at 3 weeks of age, suffering from colicky pains and persistent vomiting. Careful observation for a week led the physician to believe the child was suffering from hypertrophic pyloric stenosis. A surgical consultant concurred in the diagnosis. At 4 weeks of age, the abdominal cavity was explored. No evidence of pyloric stenosis or any other abnormality of the abdomen could be detected. After the operation, the child continued to vomit and cry with colic as before, but he retained a sufficient amount of food to sustain life and gain weight slowly.

Most of the time the patient suffered from constipation, but often would have loose bowel movements with a great deal of mucus. The abdominal symptoms interfered so seriously with his comfort and growth that the parents demanded something be done. The pediatrician who first saw the child and the surgeon who operated upon him had an opportunity to observe him carefully over a period of three years, and they finally concluded that either the original diagnosis of hypertrophic pyloric stenosis was correct and that exploratory operation had failed to disclose the pathologic condition or adhesions had formed, contributing to the present symptoms. The abdomen was again opened. Some adhesions were found, but they were not causing obstruction. The pylorus and stomach were both normal. After the second operation the symptoms continued as before.

Three weeks after the second operation this patient was brought to my office for study from the standpoint of food sensitization as a possible cause of the symptoms for which he had twice undergone surgical operation. The history of the case revealed the fact that besides the vomiting and colicky pains, from which the patient had suffered since 3 weeks of age, there had from time to time been eczema of a rather severe form. He was suffering from it at the time the pediatrician first saw him.

The patient's mother had migraine and eczema; one maternal aunt had hay fever and asthma; the maternal grandmother had asthma; the maternal grandfather had eczema and migraine; the maternal great-grandmother had eczema.

The child suffered from no disease except the gastro-intestinal symptoms and the eczema.

When the patient was 14 months of age, eggs were added to the diet, which caused violent attacks of vomiting. The parents had learned that foods which contained egg always increased vomiting, so eggs had been left out of the diet. They thought they had been excluding all foods which contained egg, but it was found that almost daily the child had been taking egg.

At the time of the first operation, the child's diet consisted entirely of breast milk. The mother reported that during this time, because the child was doing so poorly, she was advised to have plenty of eggs and milk in her diet. About a week after the first operation, the child was placed on lactic acid milk, and for the next three years his diet was modified from time to time with the addition of practically everything he could be persuaded to eat.

Testing for protein sensitivity gave positive reactions to oats, egg, cow's milk, Irish potatoes, tomato, orange, and grapefruit, the greatest reaction being that produced by the egg.

Removal of the foods found positive on testing alleviated all abdominal symptoms in twenty-four hours and resulted in the disappearance of all skin lesions in one week. By clinical trial the following foods were added, one at a time: grapefruit, orange, tomato, Irish potato, oats, and then cow's milk, with the result that apparently the patient was able to tolerate all of these foods well with the exception of cow's milk. Because of his emaciated condition, milk was not entirely excluded from the diet. Then egg was tried in very small amounts. It caused a return of abdominal symptoms even when the smallest quantity was used. There have been frequent recurrences of severe colicky pains, and it has been found that the parents or nurse have unknowingly given him egg-containing foods. During one attack, which was severe, epinephrine was given in 6 minim doses, with relief of symptoms.

TREATMENT

As in all allergic syndromes, the elimination of the etiologic antigen will affect relief from symptoms. Suitable substitutes must be provided when essential foods, such as wheat, egg, and milk, are omitted from the patient's program.

Safe-Mix, containing potato and soy beans, is a new wheat-free flour suitable for waffles, muffins, and gravies. Barley and rice crackers may be substituted. Pure rye bread is difficult to prepare and the cooperation of a good baker is essential in securing bread with a minimum of wheat flour. For infants, milk substitute of soy bean, such as Mullsoy or Sobee, are excellent.

Caution should always be the watchword in satisfying mineral and vitamin requirements and at times the addition of bulk is necessary to prevent spasm and constipation.

If the chemical investigations reveal insufficient secretions for normal physiologic function, this fault must be alleviated.

Hydrochloric acid (15 drops of dilute U. S. P. through a glass tube or Acidulin capsules 1) is frequently necessary, particularly in the older patients and in those with long standing histories. It should be given, how-

ever, only after adequate determinations. Pancreatic enzymes in the form of panteric granules (Park Davis & Co., enteric-coated, grains 5, with food) have been a great help to many of my patients. Phenobarbital (grains .5) and belladonna (tincture, drops 15 before meals) have their place in the relief of spasm, but care must be used in combining these with the new antispasmodics. Benadryl (50 mg.) and, better still, pyribenzamine (50 mg., after meals) offer more in the pharmacologic approach to relieve symptoms and carry a certain amount of diagnostic information. Opiates, atropine derivatives, and barbiturates should not be used simultaneously with benadryl or pyribenzamine. Even though these drugs may be used over long periods of time with no adverse effect, this should not prompt a relaxation of efforts to discover the etiologic offender.

In the more severe or acute crisis, from 4 to 6 minims of 1:1,000 epinephrine is the drug of choice. Opiates in the form of codeine (grains .5) and paregoric (drams 1) will control cramping and hyperperistalsis, but are not to be indulged in too frequently. Aminophylllin (grains 3.75 or 7.5), given intravenously, may prove diagnostic as well as therapeutic.[12]

I do not use injectible food antigens and know of no work that has demonstrated their merit. Oral hyposensitization has also been discarded because it has not been responsible for increased food tolerance. Many patients have demonstrated increasing tolerance to foods avoided for a sufficient length of time and such foods may be restored to the diet in a rotation type of program.

CONCLUSION

Allergic gastro-intestinal disease must be considered in differential diagnoses when functional diagnosis has been made, but only after careful exclusion of organic disease.

Protein food tests are generally disappointing in eliciting the etiology of intestinal allergy, particularly in the absence of coexisting respiratory allergies, but are a component part of thorough investigation.

Food diaries and elimination programs through their guidance are the chief sources of information and means of maintaining stability in nutrition in the chronically ill patient.

A conscientious effort must be made to provide and maintain normal physiologic function by drugs, diet, minerals, and vitamins.

Of all drugs available, pyribenzamine and benadryl are probably the best aids in controlling symptoms; however, in the acute phases epinephrine and opiates may be necessary.

The ability to control symptoms with drugs does not obviate careful diagnostic evaluation and elimination of the offending factors.

In acute abdominal disturbances when symptoms and findings are not clear-cut, the physician must consider gastro-intestinal allergy as a possibility, but, great delay in surgery should be avoided.

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ABSTRACT OF DISCUSSION

Dr. Charles B. Shuey, Dallas: I am sure everyone will agree that any existing organic disease should be ruled out by thorough roentgen and laboratory studies before considering too strongly an allergic etiologic background. It is probably just as important, however, to have a careful allergy survey and management before associating patients' symptoms with psychogenic factors. It is also true that occasional poor results in treating organic lesions in the accepted manner may be attributable to an associated allergy. I have seen a milk-sensitive peptic ulcer patient who did not improve until he was placed on a milk-free diet.

I was pleased to hear Dr. Seibold mention the limitations of skin testing. A positive reaction means that the patient's skin is sensitive to that particular extract, and simply furnishes a clue which must be proved or disproved by trial. If the patient has not been relieved by excluding ingestants which show positive food reactions, allergy cannot be ruled out until the effects of elimination diets have been carefully observed, and in many instances a food diary furnished valuable leads which assist in a diagnosis. Finally, I should like to voice a strenuous objection to subjecting such patients to several hundred tests on food, many of which foods the patient has never eaten and may never eat, and then telling him that he is allergic to twenty or thirty foods without proving or disproving the significance of the positive reactions.

Dr. Ford Wolf, Temple: The problem is so extensive that Dr. Seibold could bring out only a few of the major points, and I particularly want to emphasize some that he could do no more than mention.

First, there is no single symptom pathognomonic of gastro-intestinal allergy. Every symptom associated with gastro-intestinal allergy is evoked by

some other mechanism more often than it is by that of allergy. Thus, the allergist must be a diagnostician and not simply a skin scratcher. My valuation of skin tests in the diagnosis of gastro-intestinal allergic manifestations is that they are too inaccurate to be relied upon, yet they give too many clues to be abandoned. In other words, it takes a deal of interpretation to get the value out of skin tests.

Gastro-intestinal allergy may well be mistaken for an acute condition in the abdomen which should be treated with surgery. This is particularly true in the case of youngsters who vomit persistently and have right lower quadrant pain. I have stopped trying to decide whether a given episode of right lower quadrant pain is an allergic reaction or appendicitis. To me it is appendicitis, and if further attacks occur after the appendix is out the allergic background can be worked out without the fear that unwarranted chances are being taken with the child's life. Moreover, Dutton some years ago showed that actual allergic appendicitis occurred with the same pathologic results as in the usual type appendicitis.

I would like to stress more than anything else the absolute necessity of proving significant sensitivity to important foods before they are left out of the diet for any material period of time. Even skilled allergists too often inadvertently allow their patients to become malnourished by unnecessarily avoiding certain foods for long periods of time simply because of positive skin tests, which most certainly are not proof of sensitivity.

The patient who presents the most perplexing problem from both the diagnostic and therapeutic standpoints is the psychoneurotic or neurasthenic person with digestive tract symptoms. These patients have been the rounds from doctor to clinic to charlatan, and someone finally suggests the allergist. Often the patient is so eager to find any basis for the symptoms other than neuroses that the response to allergic trial diets and therapy is apt to be misleading. And yet, allergists owe this group their consideration, for certainly nervous folk can be allergic, and their complaints cannot be brushed aside simply because a neurogenic basis for some of their symptoms is recognized. Thus, unless they are astute, allergists are apt to have many half starved patients who think they are allergic to nearly everything they eat, but who are really psychoneurotic persons for whom the real diagnosis is being postponed by unduly prolonged dietary hocus pocus.

POLIO COMMON IN "ADVANCED" AREAS

The paralytic form of infantile paralysis became an epidemic disease only a little more than fifty years ago and has occurred with greatest frequency and severity in the countries in which sanitation and hygiene have made their greatest advances, Dr. Albert B. Sabin of the Children's Hospital Research Foundation and Department of Pediatrics, University of Cincinnati College of Medicine, points out in the June 28 issue of *The Journal of the American Medical Association.*

Dr. Sabin mentions the peculiar circumstances surrounding large outbreaks of infantile paralysis in such cities as New York, Chicago, and Denver as compared with Chinese cities like Peiping and Shanghai, where only rare sporadic cases have been reported. He also calls attention to the changing age incidence for poliomyelitis. While from 80 to 90 per cent of all cases of paralysis occurred in children under 5 years of age when epidemics first made their appearance, now many cases occur in the 5 to 9 age group, and in some parts of the United States from 25 to 33 per cent of all paralyzed patients are in the 10 to 19 year age group.

EARLY AMBULATORY TREATMENT IN GYNECOLOGIC SURGERY

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Early ambulation following surgery is not new, and much has appeared in the recent literature concerning it; however, it is still practiced in surprisingly few hospitals, and by a limited number of surgeons. It has been used successfully in thousands of cases throughout the country, so that physicians who were skeptical need not refrain from its use any longer. Having used it in more than 200 major gynecologic operations, I wish to present the advantages of early ambulation over prolonged bed rest. My findings are similar to those of other surgeons and clinics where its advantages have been established.

With the practice of early ambulation, vascular and pulmonary complications are becoming rare. Postoperative atelectasis with temperature elevation of several degrees has become a thing of the past. Patients in this group are usually put on a regular diet the first postoperative day. Early feeding diminishes gas pains and helps to prevent distension, thus lessening the use of cathartics and enemas. Voiding has been spontaneous in most cases. Early ambulation has cut down the use of bed pans, a relief that can be appreciated by patients who have been bedfast for any period of time. The use of sedatives and hypnotics has been greatly reduced. Often a patient will require only two or three hypodermic injections for pain during her hospital stay. It has cut the time of hospitalization per patient by nearly 50 per cent, thus creating a saving to the patient as well as increasing the bed capacity of the hospital. It has reduced the amount of nursing care, thus helping to solve the nursing shortage so prevalent throughout the country.

More than 50 per cent of the major surgery done in most hospitals involves the female pelvis and perineum. The principles that apply to early ambulation in gynecologic cases also apply to surgery of the remainder of the abdomen and chest. In this report are included as early ambulatory cases those patients who were gotten out of bed within the first forty-eight postoperative hours. Most of these patients have been up within the first twenty-four hours. Cases in which early ambulation has not been practiced include those in which there was marked debility, hemorrhage, avitaminotic and hypoprotein-

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emic conditions, and where there was pregnancy and fear of miscarriage. Drains, nasal tubes for intestinal suction, and indwelling catheters are not considered contraindications per se unless associated with one of the above complications.

In the discussion of preoperative, operative, and postoperative care of the patient, important points on early ambulation can be listed. A more cooperative patient can be insured by explaining to her before the operation about early ambulation, emphasizing its advantages and why she is to be gotten out of bed the day following surgery. With this knowledge she is warned what to expect, which makes the doctor's and nurses' duties much easier. Before surgery the usual laboratory check is made and the fluid balance put at normal. Avitaminosis and hypoproteinemia are treated if present. A good night's rest before operation is essential. Proper and adequate sedation before surgery makes a smoother narcosis and cuts down on the amount of anesthetic used. Dehydration of the patient must be prevented by giving intravenous fluids either before, during, or shortly after the operation. Since fluids by mouth are usually withheld eight or ten hours before operation and since very little are allowed following a general anesthetic it is imperative that intravenous fluids be given. Dehydration predisposes to shock, causes a slowing of circulation, and contributes to the formation of thrombi.

At operation, respect for the tissues is essential to good surgery. Hemorrhage, mass ligation of tissues, and infection must be prevented. Speed at the expense of tissue trauma and loss of blood has no place in surgery. The transverse and oblique incisions have proved to be more physiologic than the vertical, but regardless of the type used, adequate exposure must be obtained. Small incisions mean additional trauma to the underlying tissues and the possibility of overlooking pathologic conditions. Both absorbable and nonabsorbable sutures have been used with good results. It is not the suture material but its size and the manner of its use that is important. Sutures should not be tied with the underlying tissues under marked tension. Necrosis of the tissues will take place to serve as a possible site for infection. I feel more secure in using interrupted cotton sutures in the fascia and skin. Retention sutures are never used in cases that are to be ambulatory on the first or second day. Support of the operative site of the abdomen gives the patient a feeling of security, whether this be adhesive strapping or an abdominal binder.

The postoperative course consists in preventing dehydration, respiratory, and vascular complications. Mention has been made of the prevention of dehydration before surgery. The same policy must be carried out following operation. To insure an adequate twenty-four hour urinary output from 3,000 to 4,000 cc. of fluid must be taken. The usual postoperative orders allowing patients fluids as tolerated the day of operation mean anywhere from 200 to 1,000 cc. unless someone is forcing fluids at the bedside. For this reason intravenous fluids should be given postoperatively.

For the prevention of pulmonary complications the patient is encouraged to take frequent deep respirations, turn often, and move the legs. The head of the bed is usually elevated as soon as the patient begins to react. Carbon dioxide inhalation is excellent to stimulate deep breathing but is not always available. The lower one-third of the bed is not broken under the patient's legs, for this causes a stasis in the popliteal veins and contributes to calf thrombi. I apply Ace elastic bandages to the legs of each patient before she leaves the operating room to help prevent any stagnation of the superficial vascular system.

The day following surgery the patient is allowed to sit on the side of the bed, is helped to a stool, and finally stands on the floor. She is helped to a chair and allowed to remain there for a few minutes while the nurse straightens the bed. The same afternoon she is allowed to stay up longer and take a few steps with the nurse supporting her. She is told that the operative site will be very sore the first postoperative day but much less each following day. She is not encouraged to cough at this time, for the effort is ineffectual and causes pain at the operative site. She is encouraged to use the bathroom for urination. Some patients, mainly those with only abdominal incisions, never use the bed pan during their hospital stay.

On the second postoperative day the patient is gotten up three times and encouraged to walk about the room each time. An enema may be given on the second postoperative day and may be repeated the following day. Patients with perineal operations are usually kept in the hospital for from seven to ten days, whereas those with only abdominal incisions are allowed to go home on the fifth or sixth postoperative day. Transportation by ambulance is not necessary; patients are able to travel by private car. Some of my patients have gone home on the sixth day and traveled as far as ninety miles to their homes.

CONCLUSION

Early ambulation is recommended. Complications are rare. There have been no cases of wound disruption, no hernias, or major vascular complications in more than 200 cases in which early ambulation has been carried out. The postoperative temperature level in this group has been about one to two degrees lower than that usually seen in non-ambulatory patients. Gas pains were reduced to a minimum. Patients lost relatively little strength. Hospitalization has been cut to approximately one-half of that usually required for such patients. The skin sutures were usually removed on the seventh or eighth day with most of the patients reporting to the office for this procedure.

ABSTRACT OF DISCUSSION

Dr. C. P. Hawkins, Fort Worth: It is gratifying to listen to progressive papers such as this. One of the most difficult tasks in surgical practice is to change hospital technique and routine. It takes courage and conviction, because any suggested change from a routine of years' standing is immediately frowned upon by the surgical staff, treated with consternation by the nurses, and looked upon with skepticism by the patients.

Dr. Taylor has clearly shown that the success of early ambulation depends on the proper care of the patient both preoperatively and postoperatively. Failures are too often due to the poor physical condition of the patient. I would emphasize his admonition that the patient be properly instructed as to the reasons for early rising. Confidence must replace fear and anxiety before success can be assured. Each patient must be assured that no harm will result. The barriers of preconceived notions must be broken down.

The results of early ambulation in obstetrics are equally gratifying. Since obstetrics and gynecology are so closely allied, I trust the essayist will pardon me if I report my observation on approximately 800 obstetrical patients who had early postpartum ambulation. They were observed in the U. S. Navy and in private practice. The patients were all allowed up on the third or fourth day for bathroom privileges. Episiotomies were done in every instance with 00 chromic catgut used throughout. Improvements noted were as follows: (1) Catheterizations were less frequent. (2) Enemas were given less often. (3) Involution of the uterus was usually two to three days ahead of schedule. (4) Lochia was definitely decreased, and no stagnation of blood was allowed in the vagina, so that there was less odor about the vulva. (5) All episiotomies healed normally because the perineum was kept cleaner and drier. Patients who lie in bed keep the vagina filled with lochia and bloody debris. Early rising does not cause any undue strain on the perineal sutures. Every obstetrician should be given a ten day bed rest with enemas and the bed pan in order that he may from personal experience be convinced that sitting over a commode for the bodily functions causes much less physical strain than the complicated maneuvers about the bed pan. (6) Retroversions were no more common. The promontory of the sacrum has a much better opportunity to nudge the fundus forward while the patient is in a standing position than when she is supine. (7) There were no cases of phlebitis or thrombophlebitis. (8) The morale of the ambulant patient is its most attractive feature. To be relieved of all the petty annoyances that go with the bed pan, catheterizations, enemas, and to avoid the feeling of utter exhaustion that accompanies confinement to bed were an inspiration to each patient. Convalescence becomes a pleasant memory rather than an ugly experience.

Early ambulation makes recovery more rapid, is scientifically sound, and is worthy of acceptance as an approved procedure.

THE OBSTETRICAL CRIPPLE

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The dangers incident to normal childbirth are as a rule markedly increased by any type of operative procedure. In considering termination of pregnancy by cesarean section one should adhere to the strictest indications and should take into consideration the age of the patient and the possibility of future childbirth. The sole complication of future pregnancies, ruptured uterus per se, with its extremely high maternal and fetal mortality, should make one consider twice before subjecting the patient to a cesarean section operation. The crippling of women for future childbirth by cesarean section has shown a marked increase in the past ten years. This has been in part because the operation itself is technically easy, and has been used by many as an "out" for such indications as prolonged labors caused by uterine inertia and varying degrees of Bandl's rings in elderly primigravidas. All obstetricians have had appear in their offices patients who have had previous cesarean sections done because of breech presentation in a primigravida, or because of supposed dystocia which did not actually exist; often these patients having not been given the benefit of a trial labor. The indiscriminate use of cesarean section to satisfy the desires of a woman to avoid labor or to conserve the time of the doctor is to be severely condemned. Such patients with scars in their uterine walls from previous cesarean section must be classed as obstetrical cripples and any future pregnancy may be attended with hazardous complications.

As stated by Laughlin[10] this operation "has been prostituted for the convenience and possibly even to the financial well-being of the physician." This author also stated that "assuming there are about two and one-quarter million births in the United States annually and that one and one-half per cent of the births are by the abdominal route, it is obvious that 33,750 Cesarean sections are performed each year. Assuming further that the maternal mortality is five per cent, a figure which probably represents a fair approximation, it appears that nearly 1,700 mothers die following the operation annually.

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This constitutes roughly fifteen per cent of the total annual maternal mortality for the country . . . "

Beacham and Varino[1] reported 64 cases of ruptured uterus treated at Charity Hospital of Louisiana, at New Orleans, with a maternal mortality of 60.39 per cent and a fetal mortality of 73.43 per cent. Rupture of the uterus is more likely to occur in the classical type of cesarean section than in the low cervical type of operation.

At St. Joseph's Infirmary, Houston, there were 30,497 mothers delivered from August 27, 1938, to December 31, 1945, inclusive. Of these mothers 630 were delivered by cesarean section, giving an incidence of 2.06 per cent. There were 7 mothers who died following cesarean section, giving a maternal mortality of 1.1 per cent in this series.

The general indications for these cesarean sections compare favorably with other large series. Seven laparotomies were done because of ruptured uterus, giving an incidence of 1.1 per cent. Two laparotomies were performed because of impending rupture of the uterus. The fetal mortality for the total 30,497 deliveries was 520 or 3.2 per cent, with a corrected fetal mortality of 1.53 per cent. The uncorrected fetal mortality following cesarean section was 33 or 5.7 per cent with a corrected fetal mortality of 4.1 per cent. The statistics show that cesarean section is not always a good operation for child salvage. These statistics also show a marked improvement over those reported by Davis[3] for Houston in two hospitals from 1923 to 1926. He reported that "in the City of Houston from 1923 to 1926 there were 107 cesarean sections done in two hospitals." The patients came from the private practice of general practitioners, general surgeons, and obstetricians of the city. The maternal mortality following these operations was 14.4 per cent. Fifty-one of these 107 patients were operated upon by a group of recognized surgeons and by physicians in general practice with a maternal mortality of 33 per cent. The other 56 patients were delivered by a small group of recognized physicians specializing in obstetrics and by surgeons closely associated with them with a maternal mortality of only 1.8 per cent. The marked improvement in maternal mortality at St. Joseph's Infirmary can be largely attributed to a rule which requires all cesarean sections to have consultation by a member of the active or associate staff and the willingness of the staff to give such consultation gratis if desired. It is believed that rigid enforcement of consultation in all cases of cesarean section tends to lower the incidence of the operative procedure.

R. A. Johnston[8] in a recent publication gave a critical review of 362 cesarean sections performed in 5,975 deliveries of private patients. This gives an incidence of 6 per cent or 1 in 16.5 cases. The author attributed this rather high incidence of cesarean section to the fact that anyone limiting his work to obstetrics would attract a larger number of complicated cases. Repeat cesarean sections over a period of two decades would account for a goodly number of these cases. There were 83 cases of repeat cesarean section, but in only 15 was the second operation done because of suspected weak uterine scar. There were 2 patients with ruptured uterine scar, giving an incidence of less than 1 per cent. Twenty-three of the 5,975 mothers who had had previous cesarean section were later delivered through the natural passages. The corrected maternal mortality was 0.83 per cent. The fetal mortality was 16 or 4.4 per cent, corrected to 5 or 1.4 per cent.

Kahn, Douglas, and Morrison[9] gave a critical analysis of 1,088 consecutive cesarean sections done at the University Hospital, University of Maryland School of Medicine with a 5.07 per cent maternal mortality. These cesarean sections represented a 2.1 per cent of 49,778 deliveries. One hundred sixty-six of these patients had had previous sections and 23 were again sectioned for this indication.

Irving[6] quoting DeNormandie[4] stated that in 1937 and 1938 there were 4,298 cesarean sections performed in Massachusetts. In these cesarean sections there were 379 dead babies, giving an infant mortality of 8.8 per cent. This agrees closely with a rate of 8.5 per cent derived from a study of 3,037 cesarean sections reported by eleven American authors and collected by Irving[5] in 1937. Almost a third (1,211) of these cesarean sections were repeat operations.

In addition to a definite indication for cesarean section, one must consider the age of the patient, history of previous labor, condition of the cervix, position of the fetus, and a most important point, the future chance of childbearing. Whenever a cesarean section is done, the patient has definitely been crippled for future childbearing.

Cephalo-pelvic disproportion accounts for the majority of cesarean sections done and needs only to be mentioned here. Severe degrees of contraction are rare and whenever they are present there can be little concern provided they are recognized. In the milder degrees of cephalo-pelvic disproportion, often termed border line cases, one should, provided there is no other real indication for cesarean section, allow the patient a trial of labor and an expert opinion by a radiologist should be

obtained early in labor. Waters[11] stated that a "test of labor depends on the character, frequency and effectiveness of first stage uterine contractions and correlated factors, such as the physical status and emotional balance of the patient."

Previous cesarean section in itself is not an indication for a repeat section and one must consider the initial indication, consistency of the cervix, type of operation performed, the presence or absence of postpartum infection, and the fetal size. If the patient has had a previous low cervical cesarean section attended with no morbidity and does not have a recurrent indication, a trial labor may be allowed. Rigid attention must be given these patients and the doctor may spend many an anxious moment before normal delivery is completed. Even though one stays constantly with the patient, it is at times almost impossible to ascertain from the symptoms and signs of the patient the correct condition of the uterine scar. Ideally it would be wise to have the operating room ready in all such cases. Irving[6] reported 55 patients seen at Boston Lying-In Hospital from 1929 to 1938, inclusive, who had had previous cesarean sections and were delivered 73 times subsequently through the pelvis. Of these 1 mother died of pulmonary embolism giving a maternal mortality of 1.4 per cent and four infants or 5.5 per cent were lost. Three were stillborn following premature separation of the placenta and 1 had spina bifida and meningocele. It is believed that if the initial operation was done on a primigravida the second pregnancy would more than likely result in a repeat cesarean section than if the patient had been in labor or had passed a child through the birth canal.

Placenta previa is not a definite indication for cesarean section. The conservative treatment of certain varieties, as stated by H. W. Johnson,[7] gives far better results than radical treatment. Central placenta previa is an indication for cesarean section. The marginal and partial types in multiparas may be handled conservatively with better results. Johnson brings out the fact that there is very little danger of the patient's bleeding to death provided no active measures are taken to effect delivery of the baby or placenta. The fetal mortality in placenta previa is necessarily very high and I concur in the belief that conservative treatment gives far better results than cesarean section in the majority of cases.

In a consideration of abruptio placenta as an indication for cesarean section one must consider the amount of blood loss and amount of shock, the condition of the cervix, and the parity of the patient. Each case must be individualized and in patients exhibiting progressive shock and blood loss with a long, rigid, unripe cervix, especially in a primipara, cesarean section is the operation of choice. In milder cases with a ripe cervix the conservative treatment advocated by Irving, namely, sedation, rupture of the membranes, abdominal binder, and blood replacement, offers excellent results.

Heart disease in itself is no longer an indication for cesarean section. It is far better to treat the heart condition and forget surgery. The practice of cesarean section for sterilization has been abandoned as tubal ligation two to three days postpartum carries much less risk.

Many of the malpresentations, and especially breech presentation in a primigravida, are not indications for cesarean section. An attempt must be made to determine the cause of the malpresentation and if it is the result of feto-pelvic disproportion, the pelvic factor and not the presentation is the indication for operative intervention.

Soft tissue dystocia in the form of a rigid cervix and varying degrees of Bandl's or contraction ring may at times test the skill and patience of any obstetrician but are not per se an indication for cesarean section.

Likewise fibroids, unless they are obstructing labor, are rarely indications for cesarean section.

It is known that the convulsive toxemias are rarely an indication for cesarean section, and far better results are gotten through conservative management.

Whenever cesarean section is to be performed, I believe that the low cervical type operation gives better results than the classical type of operation. The incidence of rupture of the uterine scar in subsequent labors is less with the low type. Since the more prevalent use of the Waters extraperitoneal cesarean section and the use of chemotherapy, one has no excuse for not allowing the patient the benefit of a "trial of labor" or "test of labor."

Far too many cesarean sections are done on exhausted women following a long labor when the chances of infant survival are minimal. It cannot be stressed too strongly that cesarean section is not an efficient child saving measure. Bloxsom[2] believes that the contractions of labor "condition" the baby's respiratory center and those babies born per vaginum are less likely to need resuscitation than those where cesarean section is performed prior to the onset of labor. A trial labor, except where there is a definite indication for cesarean section, has rarely harmed

a mother or child, and may react to the benefit of the mother.

In conclusion it may be stated that no woman should be subjected to cesarean section except upon the strictest indication and after competent consultation. It must be kept in mind that cesarean section carries with it a much higher mortality than a normal delivery, and any woman who has been obstetrically crippled by this operation has not only had her reproductive life shortened but has been subjected to the risk of possible rupture of the scar in future pregnancies. This complication has an extremely high mortality. Fewer women will be obstetrically crippled if one adheres to strict indications and contraindications. Child salvage by cesarean section has not proved high as one at first would suspect.

SUMMARY

1. Operative procedures in obstetrics, especially cesarean section, carry higher risk to the mother and it is not a good operation for child salvage. Latent complications such as rupture of the uterine scar have an extremely high mortality.

2. A brief review of several large series of cesarean section is given. The statistics at St. Joseph's Infirmary, Houston, are given. The marked improvement in mortality and morbidity over that of twenty years ago is stressed.

3. It is believed that rigid enforcement of consultation in all cases of cesarean section will lower the incidence of this operative procedure.

4. The indications for cesarean section are briefly discussed.

5. It is urged that a "trial labor" be given all patients unless there is a definite indication for cesarean section. The availability of chemotherapy and the Waters extraperitoneal cesarean section makes such labors much safer.

6. Patients who have had a previous cesarean section and who do not have a recurrent indication may be given the benefit of a "trial labor."

7. A scar in the uterine wall labels a woman as an obstetrical cripple.

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ABSTRACT OF DISCUSSIONS

Dr. M. A. Davison, Marlin: To label a patient who has had cesarean section a cripple is very appropriate. She may be considered physically well, may have subsequent normal pregnancies and labors, but there remains a great deal of uncertainty. The danger of uterine rupture will limit the number of children. Many women who have had one section are afraid to have another baby and on her second section she is pretty sure to want to be sterilized. Only a very few will have more than three babies.

A cesarean section is in reality an obstetrical retreat or failure. However, there are times when a timely and successful retreat is the better strategy. With the use of good obstetrics and careful observation the incidence of cesarean section should be reduced to a minimum. The mortality rate should be kept low. There is definitely marked improvement over the figures given in 1923 and 1926 in Houston when the death rate was high. This is clear to obstetricians in Houston. The drop has come about not so much from any marked improvement in technical skill but from stricter observation of contraindications and from not doing a cesarean section when these are present, or before they have a chance to arise. I have not broadened my criteria because of the availability of chemotherapy. With the exception of placenta previa, most of the cesarean sections are done in the interest of the baby. If it was possible to disregard the welfare of the baby, mothers could be delivered by cesarean section. To do a cesarean section and have a dead or crippled baby is unfortunate. As Dr. Adam pointed out, with the fetal mortality rate in cesarean section, it is shown not to be the safest way for a baby to be born except under definite indications. Part of the fetal mortality in cesarean section is on account of the pathologic state that led to the choice of delivery rather than to the technique itself. The fact that the patient had one section is no indication that she should have a repeat. However, sometimes the same indication may exist a second time, for example, disproportion.

Those who contend that "once a cesarean section always cesarean section" maintain that no one can know the condition of the scar in the uterus. Yet to do a repeat cesarean section on all patients means a lot of unnecessary time with the inevitable mortality rate that goes with cesarean section. Furthermore, many of these same physicians say the scar that is there is barely demonstrable, in some cases not at all. Most uteri that are going to rupture because of a previous scar will do so in the last month of pregnancy. If it is capable of carrying a baby to term it will certainly stand a test of labor. If a low cesarean section has been done, it is less likely to rupture because the incision has been through the more inactive segment. Taking into consideration the indication for which the first section has been done and the type of section and nature of puerperium, it should be possible to select certain cases for repeat and certain cases for trial labor.

Dr. Joe Kanatzer, Wichita Falls: I thoroughly agree with everything Dr. Adam said as well as with

Dr. Davison. It was a splendid paper. It contained timely suggestions. I have nothing much to add. I would like, however, to mention one thing: It seems that in some parts of the country obstetricians do cesarean sections a little quicker; they seem to find more indications and to forget contraindications. I have had patients from California who have had their first baby delivered by cesarean section and could find no indications whatsoever for the operation. Recently I had a patient who had her first baby delivered by Cesarean section. She said it was done about two weeks before the expected date of confinement; the membranes ruptured and the doctor said he did a cesarean section because a breech was presented. This patient was an obstetrical cripple. After carefully checking her past history. I found everything normal with exception of the abdominal scar. Pelvic measurements were entirely normal and I received a very nice letter from her previous doctor about the section. He had done a low section and no infection followed. I felt it was safe to give this patient a trial labor although her second baby was bigger; the first weighed 6.5 pounds and the second, 7.5 pounds. After six hours of normal labor she delivered spontaneously and very easily. She was certainly one of the patients who should not have been delivered by cesarean section the first time.

Dr. Julius McIver, Dallas: Dr. Davison has already made my speech and much better than I could have made it. My clinic is in South Dallas and not in California. I do want to mention, first, that Dr. Adam presented this group with the most practical paper that anyone could ever present. I hope it will go home to all who listened.

I disagree with him, however, on two points: (1) Rigid cervix. Everyone knows there isn't any such thing. (2) Sending a patient to the roentgen ray department for an obstetric opinion is another irrational thing. If a head does not engage it certainly is not coming out. Every time students are asked, "what is the biggest indication for cesarean section" they say "dystocia" or "cephalo-pelvic disproportion." Those reasons head the list. This is just like waving a red flag in front of me. It takes one thing only to make this error in mechanism: extension of the head. If the infant puts his head down, that is correct; if he does not put his head down, he makes a mistake. If he does not, that is cephalo-pelvic disproportion. If a binder is put on the mother's abdomen, the infant will flex his head and will come on through.

Dr. B. H. Passmore, San Antonio: The term "obstetrical cripple" does not apply to more than 5 or 6 per cent of the patients who have been operated on properly by cesarean section. Undoubtedly some fall into this category, but there are also those who have been delivered by vagina, namely, cystocele, rectocele, and so forth. These women undergo a lot of danger in pregnancy and delivery. The American College of Surgeons is doing a great deal of harm bearing down on cesarean section. I think we can be stampeded into the old routine where we let women suffer unnecessarily instead of doing a cesarean section when we think it is indicated.

I have lost two babies who might have been saved by cesarean section. One was a breech presentation in a primigravida; a trial labor should never be used with a breech presentation in a primigravida. This baby died while I was attempting to extract it—the only baby I ever lost with a breech presentation. The mother had third degree lacerations; she was given a complete repair and is not a "cripple."

Another patient had a long, hard labor. The baby died; her second baby was delivered by cesarean section. If the baby could make the decision, many babies would select cesarean section rather than risk losing their lives. There should be no danger of mortality if cesarean section is properly done. I have lost only one patient in more than 250 cesarean sections. She was a woman of 40 years. In one case I found a rupture of the previous scar in the uterus with much bleeding. It is well to take a conservative attitude, but one should not go too far in trying to avoid another section.

Incidentally, when anesthesia is induced with sodium pentothal, the amount of cyclopropane necessary for anesthesia is cut down a good deal.

Dr. Robert A. Johnston, Houston: I have been interested in this subject for a number of years. In 1919 I went to Alabama with Dr. Williams and since that time it has been interesting to follow the improvements in cesarean section throughout the country. The indications were about the same then as now but the results are statistically better. I think that indications and contraindications are rather rigidly enforced now. In 1945 the maternal mortality in Houston showed not a single death in 12,000 cesarean sections. In spite of how we feel in regard to cesarean section those data are evidence that improvement is being made. Any time a woman has a scar on the uterus, obstetricians are afraid about her and of what may happen. A lot of these patients are subjected to another operative procedure. The use of roentgen ray and pelvimetry in capable hands reduces the number and incidence of cesarean section. A trial labor should always be allowed, for often the patient the obstetrician thinks will not deliver vaginally will do so and will not have to have a cesarean section. Texas as a whole should try to cut down on the number of cesarean sections. If a cesarean section is indicated and done in one town, that patient may have another delivery in another town later, and, if she dies, the physician who did the first cesarean section is responsible.

Dr. Adam, closing: I mentioned Texas statistically just to show the marked improvement here. There were probably only three or four obstetricians in Houston at the time the data mentioned were gathered, and many of the cesarean sections were done by general practitioners. The extent of indications for cesarean section may be made almost unlimited by most doctors. I agree with Dr. Passmore that the term "obstetrical cripple" is a misnomer. When I heard about my assignment of this subject for this meeting, I asked if the phrase meant the patient or the doctor.

Cesarean section is a dangerous operation. Roentgen studies should be done by a competent operator and should have an obstetrical interpreter who understands such things. Roentgen study is of no value unless it is interpreted correctly but can be very helpful if interpreted by a competent obstetrician.

INTEGRATION OF PSYCHIATRY NEEDED

Of 15,000,000 men examined by Selective Service, 1,875,000 were rejected on the ground of neuropsychiatric disorders—37 per cent of those rejected for all causes. After this initial screening, 39 per cent of all medical discharges from the army between January, 1942, and December, 1945, were classified as psychoneuroses.

More than one-half of all the hospital beds in this country are occupied by patients who are mentally ill.

At least 5 out of every 10 patients who consult physicians today have complaints which cannot be traced to a physical basis.

Dr. Joseph T. Wearn, Cleveland, cites the above facts in the August 30 issue of *The Journal of the American Medical Association* and urges that psychiatry not be isolated as a specialty alone but be integrated in all fields of medicine as only in that way can the medical profession cope successfully with the problems created by functional disorders.

HYSTEROSALPINGOGRAPHY IN THE TREATMENT OF STERILITY IN THE FEMALE

CHARLES L. MARTIN, M. D.
and
JOHN J. SAZAMA, JR., M. D.
DALLAS, TEXAS

The history of hysterosalpingography, including the introduction of lipiodol as the opaque medium by Fosdike in 1925, has been adequately covered by others.[1, 8, 21, 24] The gradual evolution of new media and improved techniques since the original transuterine tubal inflation with opaque media by Rindfleisch in 1910 and by Cary[5] and Rubin[16] in 1914 has made a permanent niche for the procedure as a therapeutic measure, and many articles[1,2,4,11] covering its diagnostic value have been published. The superiority of opaque oil instillation over gas insufflation is supported by most authorities, although some disagreement still exists as to the optimum medium. We agree with Spangler,[24] who expressed the belief that the choice of the radiopaque substance utilized is not as important as the technique of administration. However, the decreased viscosity and the rapid absorption of other media (precluding a twenty-four hour examination) has resulted in our personal preference for lipiodol.

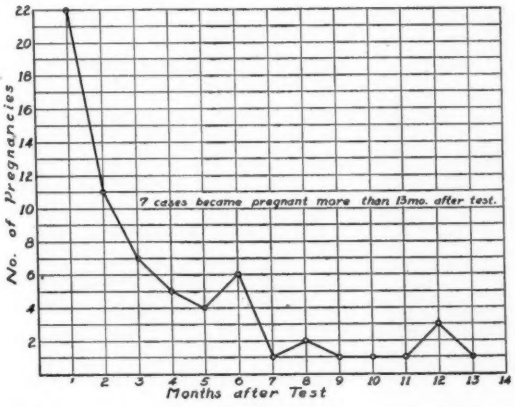

FIG. 1. Curve indicating the elapsed time between the establishment of tubal patency and pregnancy in the 72 successful cases.

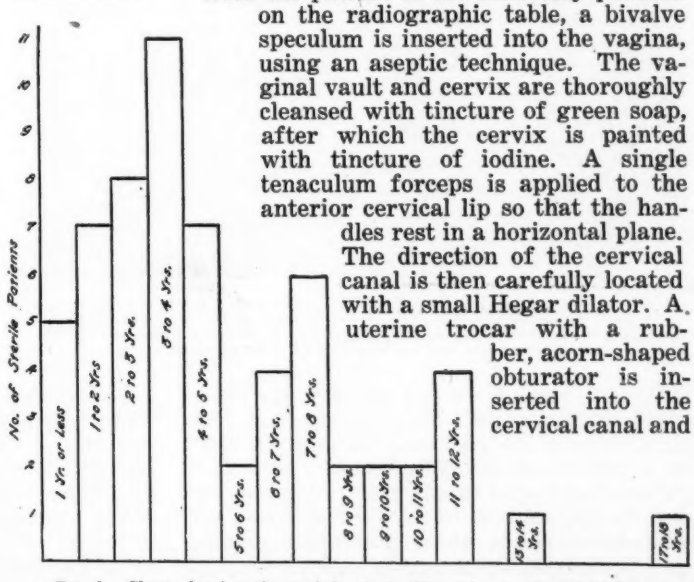
No. of Sterile Patients
1 Yr. or Less
1 to 2 Yrs.
2 to 3 Yrs.
3 to 4 Yrs.
4 to 5 Yrs.
5 to 6 Yrs.
6 to 7 Yrs.
7 to 8 Yrs.
8 to 9 Yrs.
9 to 10 Yrs.
10 to 11 Yrs.
11 to 12 Yrs.
13 to 14 Yrs.
17 to 18 Yrs.

FIG. 2. Chart showing the periods of sterility prior to the establishment of tubal patency in 62 of the 72 successful cases.

The safety of the procedure has been confirmed by others. Leventhal and Solomon[8] reported morbidity in 1 patient out of 85 with the use of lipiodol. Their communication further substantiates the relative innocuousness of lipiodol by quoting the favorable results of others. Stein[25] reported that he had not found evidence of inflammatory change (foreign body giant cells) resulting from iodized oil in numerous histologic sections of normal fallopian tubes after lipiodol instillation. Parker,[12] in outlining the procedure now in use at the Lahey Clinic, favored lipiodol. In most of the reported cases[3, 6, 7, 15, 26] of complications attributed to the use of lipiodol a questionable technique was used or the procedure was carried out in the presence of one of the contraindications noted later.

TECHNIQUE

Our method has been described in two previous reports[9, 10] but since it varies slightly from most other accepted techniques, a brief review is herewith submitted. The entire examination is carried out as an office procedure with the patient completely ambulant. The test is scheduled for the seventh or eighth day following the menses in order that it may be done just before ovulation. A cleansing enema and evacuation of the bladder constitute the only necessary preparations.

With the patient in the lithotomy position on the radiographic table, a bivalve speculum is inserted into the vagina, using an aseptic technique. The vaginal vault and cervix are thoroughly cleansed with tincture of green soap, after which the cervix is painted with tincture of iodine. A single tenaculum forceps is applied to the anterior cervical lip so that the handles rest in a horizontal plane. The direction of the cervical canal is then carefully located with a small Hegar dilator. A uterine trocar with a rubber, acorn-shaped obturator is inserted into the cervical canal and with gentle traction on the tenaculum, the obturator is fitted snugly within the external os. The horizontal handles of the tenaculum are attached to a double hook on

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a movable upright bar which can be secured on the trocar with a set screw so as to prevent leakage. A Luer lock connects the carbon dioxide insufflation apparatus to the trocar, and under known pressure and volume control, the gas is allowed slowly to enter the uterus. The rate of flow is about 60 cc. per minute, and the pressure is not allowed to exceed 200 mm. of mercury.

Normal patency is demonstrated by the passage of gas into the peritoneal cavity at pressures varying from 80 to 120 mm. of mercury. A permeable obstruction is indicated by the passage of gas into the peritoneal cavity at pressures above 120 mm. of mercury. Spastic obstruction is usually preceded by a rise to about 150 mm. of mercury. In either case, approximately 500 cc. of carbon dioxide are allowed to flow through the system, after which the instruments are removed, the patient is turned to a prone position, and roentgenograms are made, with the foot of the table elevated about 20 degrees. This eliminates the discomfort caused by subphrenic gas and also allows the carbon dioxide to surround the pelvic organs, assuring good visualization in the roentgenogram.

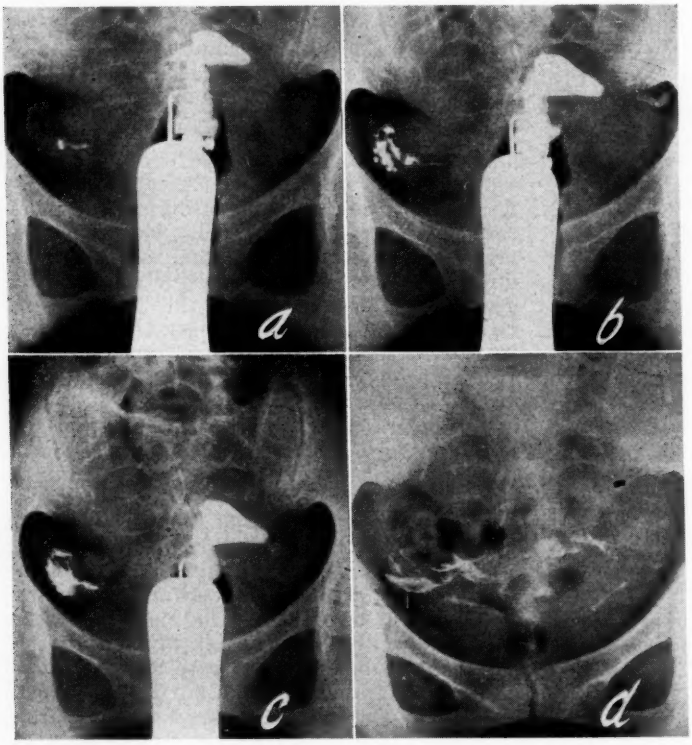

FIG. 3. Roentgenograms made following the injection of *(a)* 5 cc., *(b)* 7 cc., and *(c)* 10 cc of lipiodol into the uterus, and *(d)* twenty-four hours later. The right tube was slowly filled to its distal end by the continuous pressure technique but free oil in the peritoneal cavity was demonstrated only after twenty-four hours.

If no gas can be forced through the fallopian tubes, the rubber tube from the carbon dioxide apparatus is replaced by a Luer syringe containing 10 cc. of lipiodol. Gentle pressure is applied to the plunger until 5 cc. of the media have been injected. The valve at the end of the cannula is closed, the syringe is detached, and an antero-posterior roentgenogram of the pelvis is made. The film is processed and examined immediately. As a rule this roentgenogram will reveal no oil passing completely through the tubes. A second film is made following the injection of another 2 cc. of lipiodol, and this procedure is repeated as long as progress in the passage of oil within the tubes is noted or until oil is seen free within the peritoneal cavity. It is imperative that the increased intrauterine pressure be maintained during the entire procedure, and this is accomplished by closing the valve in the cannula between each injection. When dilatation of the uterus is observed with no progress of the oil through the tubes, the procedure is stopped. In such cases a final roentgenogram is always made twenty-four hours later. This examination frequently shows that permeability has been established, possibly as a result of the peristaltic activity of the tubes[17, 18, 22] or the action of the tubal sphincters.[23]

CONTRAINDICATIONS

Inflammatory conditions are frequently mentioned as contraindications for uterosalpingography, and certainly the test should not be carried out in the presence of an acute infection. However, many of the cases of sterility result from an old salpingitis and we have observed no serious complications following the procedure in such cases. The examination should never be carried out in the presence of any type of uterine bleeding or at the time of menstruation. It is also our conviction that it should not follow a recent curettage since the opaque oil may be forced through open blood spaces in the endometrium. Subsequent roentgenograms may visualize the veins leading away from the

uterus, and although no harmful symptoms have been reported following such a mishap when lipiodol has been used as the opaque medium, it should be avoided. It is also considered unwise to accept for this procedure patients showing evidence of cardiovascular, pulmonary, or other types of serious systemic diseases.

CLINICAL MATERIAL

During the past ten years a total of 293 women complaining of sterility lasting for periods varying from eight months to eighteen years have been examined with the combined gas and lipiodol technique described above. Most of these patients were referred to us by gynecologists and some of them had been subjected to Rubin inflations without success. In most instances only one test was carried out, but in a few cases two and even three attempts were made to produce tubal patency. Such patency was established in at least one tube in 224, or 76 per cent of the 293 patients.

Questionnaires were recently mailed to all those in whom patency was demonstrated, but since many of them have moved or live in other cities, only 169 could be contacted. Of this group 72, or 42 per cent reported pregnancies at a later date. The curve shown in figure 1 indicates the intervals which elapsed from the time of the test until pregnancy was diagnosed. It is interesting to note that most pregnancies occurred within the first six months, but a few were reported more than a year later. Although many authors feel that no credit should be given the procedure in such cases, we wish to call attention to the fact that many of the women falling in this group were married to military or naval personnel from whom they were separated for long periods of time and for this reason all those becoming pregnant are included in our series. Since very few pregnancies occurred after six months it has been our custom in unsuccessful cases to recommend a second test at the end of that period.

Some have claimed that the sterility in many of these patients was of short duration and might have righted itself. To offset this argument the chart shown in figure 2 was prepared, covering the periods of sterility in 62 of the patients who were treated successfully and from whom accurate information could be obtained. It is obvious that most of the patients had been sterile for more than three years and in only 5 had there been no conception for periods of one year or less. Since pregnancy occurred so soon after the establishment of fallopian tube patency in most instances, we believe that the procedure should be given full credit for the good results.

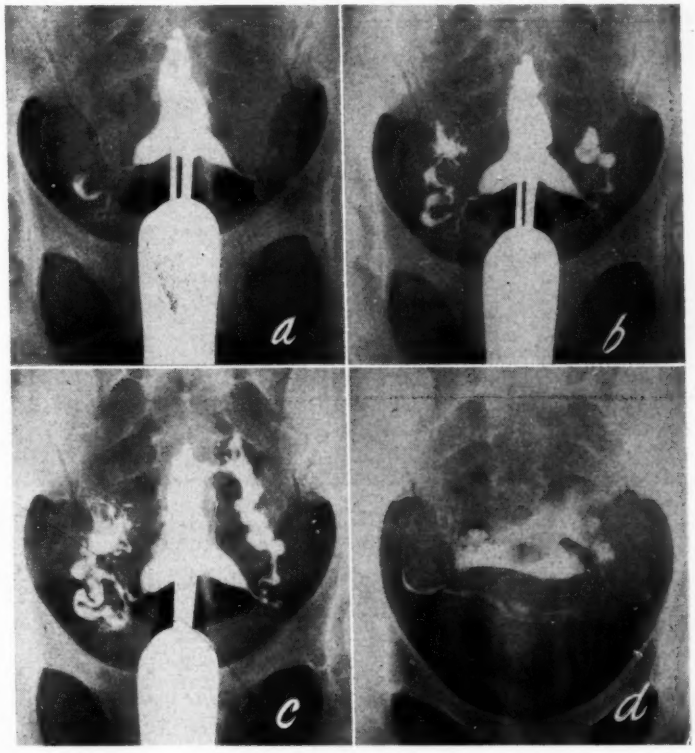

FIG. 4. Roentgenograms made following the injection of *(a)* 5 cc., *(b)* 7 cc., and *(c)* 10 cc. of lipiodol into the uterus, and *(d)* twenty-four hours later. The pictures show occlusion of both fallopian tubes with marked deformity of the fimbriated ends. A considerable amount of lipiodol is shown free in the peritoneal cavity at the end of twenty-four hours.

The patient frequently asks whether a second attempt is worth while when neither tube can be opened at the first visit. Subsequent injections have never been successful in our hands in the presence of a double hydrosalpinx, or when no lipiodol could be forced into either tube after continuous pressure had been applied for a period of thirty minutes. However, in a few cases in which

the tubes were partially visualized at the first visit, patency has been established at a second or third visit and pregnancy has occurred. These tests may be done each month just before the time of ovulation until a successful outcome results or until the operator feels that no progress is being made.

DYSMENORRHEA

In one of the first questionnaires sent out the information was volunteered that a troublesome dysmenorrhea had shown marked improvement following uterosalpingography. This interesting observation led to further investigation and it was discovered that 17, or 45 per cent of 37 women afflicted with dysmenorrhea reported marked improvement after the test was performed. Similar results have been reported by Peterson and Cron[13] and Rubin,[19, 20] but no satisfactory explanation for this welcome side effect can be advanced.

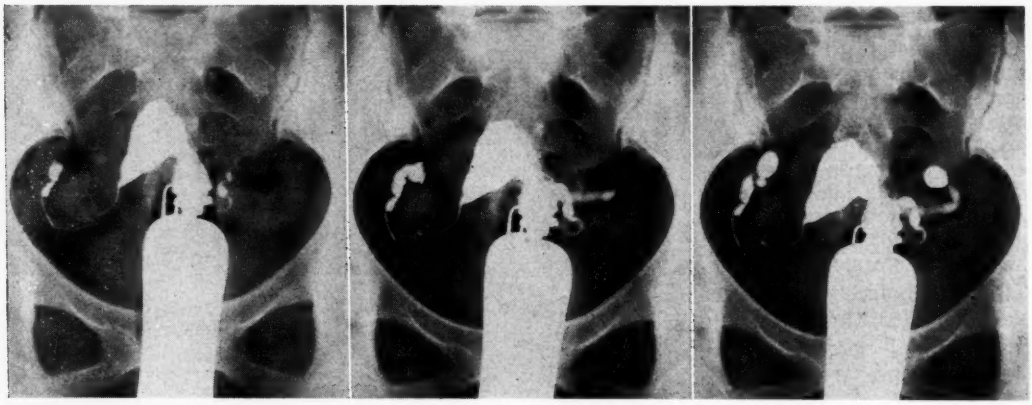

FIG. 5. Roentgenograms made following the injection of (left) 5 cc., (center) 7 cc., and (right) 10 cc. of lipiodol into the uterus in a case of double hydrosalpinx in which no patency could be established. Multiple small diverticula were observed in the midportion of the right tube.

SEQUELAE

When the procedure is carried out gently and slowly, the injection of neither carbon dioxide nor lipiodol into the uterus should cause severe pain in a normal person. Most women describe a cramping sensation similar to menstrual cramps during the time that the oil pressure is maintained in an occluded tube. As a rule this discomfort is immediately relieved when the pressure is released, except in the presence of an inflammatory process in one or both tubes. Although active inflammation constitutes a definite contraindication for uterosalpingography, 2 patients in this series apparently had such a complication at the time of examination. In each case cramping pain persisted for about three days, but the symptoms subsided rapidly following rest in bed and penicillin therapy. In another case, uterine hemorrhage appeared immediately following the procedure, but it was due to other causes and was relieved by appropriate treatment. A few of the patients in whom carbon dioxide was injected into the peritoneal cavity complained of shoulder pain on standing erect for about twenty-four hours after leaving the clinic. All of the gas is absorbed within an hour after it is injected, but many of the tanks contain air, which is absorbed slowly, and the pain is caused by the pocketing of the air between the liver and the diaphragm. This discomfort is easily relieved by placing the patient in bed with the foot of the bed elevated. In none of the 293 cases reported in this paper were any serious sequelae observed.

CONCLUSIONS

In a series of 169 sterile women, pregnancy in 72 cases followed the establishment of fallopian tube patency by the uterine injection of carbon dioxide or lipiodol. Most of the good results were obtained by the continuous application of a moderate pressure within the uterus, with injected lipiodol, for periods of thirty or forty minutes. No serious sequelae were observed in any of these cases.

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ABSTRACT OF DISCUSSION

Dr. J. R. Maxfield, Jr., Dallas: In the discussion of a paper by Dr. Martin, the discusser is always at a disadvantage since he covers the subject so thoroughly and so authoritatively. I would like, however, to stress one point. I think statistics will bear out the fact that a great majority of sterile women have tubes which are blocked, thereby preventing pregnancy. Since it is a relatively simple procedure to determine patency of the tubes, it seems that physicians who treat sterility should always consider this as the first line of attack instead of waiting until months have passed and many, many expensive drugs and valuable medical time have been used.

I want to emphasize some points that Dr. Martin made. The first is that the best media for this study is an opaque oil and that gas is not satisfactory. One of the reasons oil is the method of choice is that thus the uterine cavity itself can be visualized and the size, position, and length of the tube can also be studied, which is not possible with the air filling. The second point which I believe is of value is that in many cases in which a patency of the tube can be established, there are still multiple limiting adhesions in the patient's pelvis, which make the access of the ovum to the tube almost impossible. This can usually be detected by a roentgenogram made twenty-four hours after the completion of the examination, which is a routine part of my procedure. The third point in favor of the opaque oil is that although air will sometimes pass through a tube and establish patency, the tube immediately closes up following this procedure. When opaque oil is used, the cellular debris is pushed ahead of it so that the tube is completely and thoroughly cleaned out, and the likelihood of its closing up immediately after the procedure is much less.

The procedure has been quite satisfactory in my hands, and I believe that with reasonable caution there should be no fear of carrying it out as an office practice.

Dr. Martin, closing: In my opinion air should never be used for tubal inflation. I know of 2 patients who have died of air embolism following this procedure. Even when this complication does not occur, intraperitoneal air is retained for a number of days and causes shoulder pain until it is absorbed. Carbon dioxide is absorbed rapidly and shoulder pain is not troublesome after its use unless the gas tank contains some air.

Someone asked about the value of surgical procedure in the cure of sterility due to occluded fallopian tubes. In the literature available to us the cure rate resulting from surgery is less than 1 per cent and it has little to commend it.

TUMORS OF THE LARYNX

OLIVER W. SUEHS, M. D.
AUSTIN, TEXAS

Benign neoplasms of the larynx are not very common but they are of importance in that they are capable of producing voice changes and more rarely obstructive symptoms. Their chief importance in adults, however, lies in the fact that they must be differentiated from malignant tumors. New and Erich [15] examined 722 patients with benign growths over a period of thirty years, and during the same period 1,100 malignant tumors of the larynx were observed!

As would be expected, laryngeal tumors are very rare in infants under 1 year of age. The only case I have encountered personally was that of a subglottic hemangioma in an infant 14 weeks of age in 1939, and a review of the literature at that time[17] revealed only 5 other reported cases. Ferguson[7] reported an additional case in 1944. Recurrent attacks of afebrile laryngeal obstruction was the presenting symptom in all these cases, and associated hemangiomas of the skin were a common finding.

Multiple papilloma is the most common laryngeal tumor occurring in children and it produces dyspnea in a large percentage of cases. In these, hoarseness is of secondary importance. The experience of most laryngologists has been that papillomas tend to recur following removal until the age of puberty is reached. Repeated removal with cupped forceps or electrocoagulation without injury to the vocal cords are the treatments of choice. It is safer to clean one cord at a time to prevent adhesions between the cords, especially in the anterior commissure.

Vocal nodules, although traumatic and inflammatory in origin and not true neo-

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plasms, are an occasional cause of hoarseness in children and are often bilateral. They occur usually at the junction of the anterior and middle thirds of the cord. They are caused by vocal abuse such as yelling and screaming.

In adults, the laryngologist is confronted with a more important and at times difficult problem of differential diagnosis. Laryngeal tumors can have only one early symptom in common, namely hoarseness. Voice changes are produced by any growth that arises on or near the free edge of a vocal cord, or a growth that by virtue of its size is capable of interfering with approximation of the cords. Growths arising in the subglottic area, on the ventricular bands, or upper orifice of the larynx are usually asymptomatic until they have attained sufficient size to produce obstructive symptoms, or by extension interfere with the motility of the cords or arytenoids. Tumors at the upper orifice of the larynx occasionally produce dysphagia as the first symptom.

According to New and Erich[15] most benign tumors in the larynx, with the exception of the papillomas, are inflammatory in origin, but they may undergo cellular changes which later render them indistinguishable by either clinical or histologic methods from true benign neoplasms. Chronic inflammation plus vocal abuse are the primary factors in the etiology of most of the benign nonneoplastic lesions.

Polyps, single papilloma, vocal nodules, and diffuse inflammatory thickenings are the most frequently encountered benign growths in the order mentioned. Cysts are probably next in frequency. There have been relatively few cases of adenoma, chondroma, angioma, and the other benign tumors of epithelial and connective tissue origin.

When dealing with a benign growth, the primary objectives are to restore a normal voice, or occasionally in the case of larger or multiple tumors, to relieve obstruction to the laryngeal airway.

Small inflammatory growths will disappear spontaneously on a regime of absolute vocal rest after two or three weeks in from 80 to 90 per cent of cases. The other cordal growths should be removed by means of direct laryngoscopy with cupped forceps, excision with laryngeal knife, electrocoagulation, or a combination of these methods, being careful, of course, not to injure the underlying vocal cord. The patient should be kept on vocal rest postoperatively until the cord has healed (10 to 14 days). For the fusiform diffusely thickened cords observed in chronic hypertrophic laryngitis, the stripping technique described by Loré[12] is probably the most effective.

Thyrofissure with or without preliminary tracheotomy is occasionally necessary to obtain adequate exposure for the removal of the larger sessile growths such as large cysts, chondromas, and fibromas.

MALIGNANT TUMORS

The various forms of sarcoma are rarely encountered in the larynx, and only occasional cases of basal cell carcinoma and adenocarcinoma have been reported.

Squamous cell carcinoma is not only the most common form of cancer but, unfortunately, it is the most common neoplasm of any kind occurring in the adult larynx. In 1940, the Jacksons[9] made a detailed study of the incidence of cancer of the larynx and on the basis of mortality statistics over a five-year period (1934-1938) found that it was not only steadily increasing in frequency but that the ratio to total cancer deaths was also increasing.

A special report recently received from the United States Public Health Service indicates (table 1) that the number of deaths from laryngeal cancer have continued to increase from 1938 through 1944 in spite of an increasing percentage of cures in

TABLE 1.—*Deaths from Cancer of Larynx in the United States, 1938-1945*

Year	No. of Deaths		Ratio
	Cancer (All Forms)	Cancer of Larynx	
1938	149,214	1,340	1:111
1939	153,846	1,384	1:111
1940	158,335	1,457	1:108
1941	159,926	1,453	1:110
1942	163,400	1,549	1:105
1943	166,848	1,490	1:111
1944	171,171	1,567	1:109
1945	177,464	Not Available	

treated cases! The ratio to total cancer deaths has remained about the same. These mortality statistics obviously do not include all the patients with cancer successfully operated upon who later died of causes other than cancer.

It would be presumptuous for me to attempt to explain the increasing incidence of cancer of the larynx, but some[9] have suggested that the increasing use of tobacco and alcohol may be a factor. Inhalation of coal dust and coal tar fumes is also thought to be carcinogenic.

Vocal abuse has long been considered a predisposing factor in the etiology of laryngeal cancer. Of 250 operative cases reported by Clerf[4] there had been excessive use of the voice in 59 (23 per cent) as a result of the occupation of the patient. In support of hereditary tendencies, he found 41 instances in which there was a history of cancer within two generations.

Although the majority of cancer of the larynx occurs in patients between the ages of 40 and 70, it has been observed in a patient 16 years of age[13]. While in the army in France, I encountered 2 soldiers, 27 and 34 years of age, respectively, with relatively advanced cancer. One had a partial fixation of the cord and the other a subglottic lesion with extension to the upper three rings of the trachea. They had been hoarse for eight months and three and one-half months, respectively, and both had been sent in with a diagnosis of "chronic laryngitis."

Males are affected from 10 to 14 times as frequently as females.

If 85 per cent of all laryngeal cancers begin on a vocal cord, thereby producing hoarseness almost from their initial stages, and from 80 to 82 per cent of these early cordal lesions can be cured by surgery, it may be asked why there were 1,567 deaths from cancer of the larynx in 1944. Clerf[3] found that 40 per cent of such patients coming to his clinic were inoperable when first examined, and this has been the experience of many other laryngologists.

The successful management of laryngeal cancer is dependent upon early diagnosis. Delay in making a correct diagnosis may be due either to neglect on the part of the patient by not consulting a physician until he experiences pain or dyspnea or, unfortunately, to failure of the family physician who is not cancer-minded to have the larynx examined when confronted by a patient with persistent hoarseness.

SYMPTOMS

The only early symptom of cordal cancer is a disturbance of the voice. This may vary from slight huskiness to definite hoarseness which is progressive in character.

If the lesion begins on a ventricular band, aryepiglottic fold, the epiglottis, or in the subglottic region, voice disturbances occur late, that is, after the growth has spread to a vocal cord from its site of origin or after the crico-arytenoid joint has become fixed by infiltration. Lesions at the upper orifice of the larynx may produce disturbances in swallowing as the first symptom, but these are usually inoperable. Pain is always a late manifestation and usually indicates perichondritis. The pain is often referred to the ear on the side of the greatest involvement. Dyspnea is also a late symptom as it occurs only after the growth has attained considerable size.

DIAGNOSIS

Any case of hoarseness of more than three weeks' duration should be regarded with suspicion and careful examination of the larynx is indicated. In approximately 85 per cent of the cases, laryngeal cancer begins as an irregular, infiltrating, warty, or ulcerated growth on the anterior one-third or one-half of a vocal cord. From there it may spread to any of the contiguous parts of the larynx. The laryngologist should not be satisfied until the anterior third of each vocal cord has been visualized.

Partial or complete fixation of the cord indicates that the lesion has infiltrated the underlying muscles or the crico-arytenoid joint, and always makes the prognosis less favorable.

Unless there is an overhanging epiglottis, more can be learned about the extent of the growth and motility of the cords by mirror laryngoscopy than by direct examination with the laryngoscope, but the latter is helpful in exploring the ventricles and the subglottic region.

Final diagnosis, of course, depends upon the histologic examination of a representative piece of removed tissue. If the first biopsy is inconclusive and the growth has the gross appearance of cancer, the biopsy should be repeated. Clerf[3] has stated that the dangers of dissemination of cancer through biopsy are largely theoretical, but no undue time should be lost in starting treatment after the diagnosis has been established.

DIFFERENTIAL DIAGNOSIS

Cancer may at times be confused with tuberculosis, but the latter is always secondary to an active pulmonary lesion. Also, tuberculosis usually affects the posterior half of the larynx first, whereas the majority of cancer begins anteriorly. Laryngeal tuberculosis with ulceration is always painful and pain in cancer is a very late symptom.

Syphilis of the larynx is rare, and a positive serologic picture does not justify undue delay in proceeding with biopsy. It must be remembered that a patient with syphilis may have cancer, or tuberculosis and cancer at the same time. It is a mistake to waste valuable time in giving antisyphilitic treatment as a therapeutic test when the laryngeal lesion has the clinical appearance of cancer.

As a general rule, true benign neoplasms do not infiltrate or ulcerate. Leukoplakia, single papilloma, and chronic epithelial hyperplasia are at times difficult to differentiate from cancer, especially since they have a tendency to undergo malignant degeneration, but here again biopsy and careful histologic examination settles the question.

SELECTION OF TREATMENT

Laryngeal carcinoma, recognized early and properly treated, has a better prospect for cure than cancer anywhere else in the body, with the exception of cancer of the skin. Obviously, the earlier the diagnosis is made, the better the prognosis.

For cancer in any location there are two methods of treatment, surgical excision and irradiation.

The primary consideration is to cure the patient of a disease that is 100 per cent fatal in untreated cases. The voice is of secondary consideration.

Selection of proper treatment is becoming more and more individualized but is influenced primarily by the location and extent of the lesion. Mobility of the laryngeal structures is an indication of the degree of infiltration of the growth. Although grading of the degree of malignancy is important, it can at times be misleading on the basis of a small biopsy specimen, as the histologic structure of one portion of a tumor may differ from that of another portion of the same tumor. The general physical condition of the patient and his emotional status are also factors to be considered.

Laryngofissure, with removal of the affected vocal chord, still gives the highest percentage of cures and therefore is the treatment of choice for true cordal cancers if motility of the cord is unaffected. If the tumor has invaded the anterior commissure or the anterior end of the opposite cord, a triangular section of the thyroid cartilage should be removed together with the involved cords. Thomson,[18] Clerf,[4] Orton,[16] Jackson,[10] New,[13] and others have reported from 80 to 82 per cent five year cures by laryngofissure in true cordal cancers, and the operative mortality is practically nil. LeJeune[11] and New[14] have obtained a higher percentage of cures in the very early small cordal growths that were amenable to removal by the intralaryngeal route. The best results secured by irradiation have been those reported by Cutler,[6] with 71.4 per cent five year cures in a small series of cordal cancers suitable for laryngofissure.

For the more advanced intrinsic cancers and those which have become extrinsic by extension, the laryngologist must choose between laryngectomy and irradiation.

Although definite progress has been made in the irradiation therapy of cancer of the larynx, as evidenced by the impressive results of Blady and Chamberlain[2] and of Cutler[6] the results still seem too uncertain to justify its use in unselected cases insofar as the individual patient is concerned.

The question of radiosensitivity has been a controversial one. Coutard[5] has stated that only the less well differentiated tumors respond to radiation. Harris and Klemperer[8] and Arbuckle[1] on the other hand have expressed the belief that "there is no material difference in the response to irradiation by highly differentiated and less well differentiated types of cancer when the radiation is applied in lethal dosage."

Cutler[6] stated that carcinoma of a true cord is radiosensitive only before it has infiltrated and immobilized the underlying muscles and that when the cord is completely fixed, cure by irradiation is less common and laryngectomy is indicated.

Statistics of results obtained by laryngectomy are difficult of comparison in that they vary with the type of cases the surgeon accepts for operation. Until very recently, the results of irradiation were so unfavorable that most surgeons were inclined to perform laryngectomies in cases that were on the borderline of operability and occasionally even in advanced extrinsic cases. These were not errors in judgment but rather heroic attempts to save the patients' lives, as there was no satisfactory alternative. Accepting cases such as these would naturally result in a higher recurrence rate than if the cases were carefully selected. Now that irradiation has earned a more reputable place in the treatment of laryngeal cancer, the laryngologist can be more discreet in choosing patients suitable for operation and his percentage of five year cures from laryngectomy will probably be higher in the future.

Subglottic cancer metatasizes relatively early and carries a high recurrence rate, regardless of which treatment is used, but most radiologists agree that laryngectomy is the treatment to be preferred.

For the advanced inoperable cases, Arbuckle[1] has employed a technique of complete subperichondrial resection of the thyroid cartilages prior to irradiation. This has the advantage of minimizing the dangers of chondronecrosis and permits the administration of larger dosages of irradiation.

Until the technique of irradiation becomes better standardized, and the end results more uniform and predictable, I believe most laryngologists will continue to favor surgical removal in cases that are clinically operable. There is no more reaction or discomfort in most cases following laryngectomy, done under local anesthesia, than in those treated with massive doses of irradiation and the majority develop a good esophageal voice.

SUMMARY AND CONCLUSIONS

Tumors of the larynx usually have one symptom in common, namely, hoarseness.

The primary objectives in the treatment of benign tumors are to restore a normal voice or, occasionally, in the case of larger growths, to relieve obstruction to the laryngeal airway.

Unfortunately, cancer is the most frequent single neoplasm occurring in the adult larynx and statistics indicate that it is increasing yearly. Theoretically, an early diagnosis and therefore a cure could be obtained in from 80 to 85 per cent of cases if a careful examination of the larynx were made in all cases of hoarseness that persist for three weeks. Before this prediction can become a reality, the public must be educated to the dangers of persistent hoarseness and the physician must be ever on the alert for suspicious lesions.

It is hoped that the establishment of local information centers by the American Cancer Society and the organization of tumor clinics in local hospitals will attract more of such patients early in the course of the disease.

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ABSTRACT OF DISCUSSION

Dr. Tom Barr, Dallas: The larynx is one of the most easily examined parts of the body but truly the most neglected. It is not surprising to find far advanced lesions of the larynx that have been treated for months by ear, nose, and throat specialists without correct diagnosis.

In 1938 I read a paper on hoarseness at the annual session of the State Medical Association in an effort to encourage the reference of hoarse patients to those who specialize in this work. I think this was responsible for my seeing 27 early carcinomas of the larynx which I have operated on to date. Two patients of this group are physicians. All 27 have had no recurrence and they are all at work at their same positions.

In my experience I think vascular laryngeal lesions are the most common cause of hoarseness in adults. In children the most common cause is multiple papillomas. This condition does not stop at puberty, because I have 3 adults in whom I have removed these growths many times, and they still return. These cases are autoinoculable; the growth can be transplanted down the trachea and into small passageways to cause asphyxia and death from obstruction.

I would like to emphasize the fact that the cords of hoarse patients should be examined completely, and if there is doubt, they should be sent to a laryngologist promptly. Early cordal cancer can be cured by a simple operation in 90 per cent of the cases. Far advanced lesions are almost incurable.

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BLAST RUPTURE OF THE TYMPANIC MEMBRANE

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This report is based on 55 cases of ear drum perforation admitted to a general hospital in the European Theater of Operations in 1944 and 1945. All of the perforations were caused by the blast of enemy high explosive shells, mortar shells, or land mines. The patients were admitted to the hospital between four days and three weeks following injury, and remained in the hospital for an average of forty-eight days before either being evacuated toward the United States or returned toward the front.

These seemed to be no definite relation between ear drum rupture and the degree of impaired hearing. Some patients with ruptured ear drum were left without impaired hearing. Other cases without tympanic membrane perforation resulted in severe impairment of hearing. It is possible that much of the concussion is dissipated when the drum ruptures. When hearing was impaired following drum rupture, it was usually of the mixed type, with nerve damage superimposed on damage to the conductor apparatus. My training led me to believe that blast deafness was essentially a nerve deafness, so that I was surprised to observe the importance of conduction deafness in the more severe blast injuries.

The degree of perforation varied from a small slit-like rupture to large tears involving almost the entire circumference of the drum. Land mine explosions were responsible for the more severe cases, in which

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parts of the drum membrane were plastered against the medial walls of middle ears full of dirt.

It was common to see only one drum perforated, the one closer to the blast. Peculiarly enough, some of the drums seemed to have been ruptured outwards, as the edges of the perforations could be seen to be turned out. It is interesting to theorize as to whether this was caused by air pressure through the eustachian tubes or by suction following the blast.

About half the cases (27) showed evidence of middle ear infection. Of these only 2 developed mastoiditis to a degree sufficient to require surgery. In each of these 2 cases the injury was caused by land mine explosions in which the head was peppered with dirt. Middle ear infection following blasts was usually of the low grade, persistent type. The 2 mastoids were operated on seven and eight weeks after injury, respectively. In spite of this length of time the mastoids were exudative in type, with little evidence of bone destruction.

The number of cases of infection would have been less, I am sure, if no peroxide or other drops in the ear had been used during the first few days after injury. For some reason the general physician has a tendency to use peroxide or boric and alcohol drops in bleeding ears. Ear drops carry canal bacteria through the perforation. No drops should be used during the early stages of ear injuries. The ear should be cleansed with dry wipes and a cotton plug left in the canal. Sulfadiazine by mouth or penicillin by injection or both are advisable as preventives of infection. The soldier should be warned against getting water in his ear.

Those ears which were infected were treated by the dry method, that is, by dry wiping three times a day, and faint dusting of the perforations with sulfanilamide powder daily. In addition all patients were placed on penicillin injections. With the exception of 8 patients who were evacuated toward the United States before treatment was complete and 2 who developed mastoiditis, all had dry ears following the above treatment.

All patients with ear drum perforations without infection or with perforations remaining after infection healed were then observed for closure of the holes. This was important because only those whose perforations healed could be returned to full duty. A relatively large number of the perforations showed little or no tendency to heal. Often small perforations without infection showed no spontaneous healing reaction whatsoever. If a perforation showed little or no sign of healing after being dry for two weeks, an attempt was made to close it with an artificial drum in a manner described below, provided the perforation was not too large.

One of the most striking things which I learned during the war was the way drum perforations can be stimulated to heal by the use of trichloracetic acid and an artificial drum of cigaret paper. The theory is that sometimes drum perforations lose the stimulus to heal when the epithelium of the outer surface of the membrane unites with the epithelium of the inner surface at the edges of the perforation. If this epithelium can be destroyed by cauterization and a bridge of artificial drum applied, over which the new epithelium can grow, closing of the perforation should be aided, according to the theory. Of course all infection must be healed first. In addition, we gave the drum two weeks to show signs of spontaneous healing. All perforations of small to moderate size which showed little or no sign of healing were treated as described below. Treatment of large perforations was not attempted. Out of the original 55 cases 15 were found suitable for artificial drum application.

I had heard about and read of the use of artificial drums by others and decided on cigaret paper as the easiest material to handle. In applying trichloracetic acid to the edges of the perforation and then trying to apply the paper with forceps or with a suction tip, the method seemed difficult and awkward. Furthermore, the acid often caused the patient such pain as to encourage him to become uncooperative while the paper was being applied. After some trial and error the following method was evolved: A sterile piece of cigaret paper which has been cut to a size somewhat larger than the perforation is picked up by touching the paper with a cotton tipped applicator wet with sterile saline solution. The paper at the end of the applicator is then wiped onto the perforation. Another cotton tipped applicator wet with trichloracetic acid is touched against the paper on the perforation. The acid spreads quickly through the paper and cauterizes the edges of the perforation. Any pain resulting from this method matters less because the paper is already in place and the patient is no longer required to hold still. When this method was used the paper seemed to stick to the perforation better than when the perforation was cauterized first and the dry paper put

on afterwards. In 3 cases when the paper was applied it missed covering a corner of the perforation. A second piece of paper was applied to cover this corner without disturbing the first piece. This is much easier than trying to move or remove the first piece. In each of these cases the two pieces of paper were stuck together three weeks later, so that removal was no more difficult than usual.

The artificial drum was left in place for from two to four weeks, according to the size of the perforation. It was then removed with a small spatula or fine wire loop, a short gas anesthesia sometimes being necessary to accomplish this without reperforating the drum. I was surprised to find about 75 per cent (11 out of 15) of the perforations healed after removal of the paper. This good percentage is partly due to the fact that no large perforations were treated. Two of the perforations required two periods of artificial application before healing. In one of these cases the paper came loose at the bottom of the perforation following a spell of sneezing. In the other case the edges of the perforation were turned outwards, the paper was difficult to apply, and it came loose; a second and larger paper was put on and it stayed in place. Of the 4 failures it was my belief that 2 failures were due to the perforations being too large, 1 was due to recurring drainage whenever the paper was applied, and the fourth seemed to be caused by the persistent coughing or sneezing of air through the eustachian tube, so that the paper would not stay exactly in place.

Many reasons have been offered to explain how artificial drums aid in the healing of perforations. It is interesting to speculate concerning them. The destruction of the epithelium at the perforation edge plus supplying a bridge over which the epithelium might grow does not tell the whole story. The application of acid and paper to the drum causes it to become very red. When the paper is removed layers of desquamated epithelium usually come with it. The drum engages in a foreign body reaction against the paper. It seems to me this is a highly important factor in the stimulation of healing. Others have thought that the paper prevents the formation of a crust at the edge of the perforation, and in so doing keeps the edges of the perforation moist so that it can heal without being obstructed by a dry crust. Probably a combination of factors is responsible for the healing process.

One case in particular was very instructive. A 21-year-old tank corpsman was proceeding down a road with his head protruding from the top of his tank. An 88 mm. shell exploded to the left and in front of the tank. Both drums were ruptured. The left one, when I first saw it five days later, showed a small to moderate sized round perforation with some infection. The edges of the hole were neither turned inwards nor outwards. The right drum perforation was small and slit-like with no infection, and the edges of the rupture were definitely turned outwards. This drum must have been ruptured by pressure from within the middle ear. I believe that pressure from without ruptured and caused the infection of the left ear, the side on which the explosion occurred, and that the right ear was not infected because it had been ruptured from within.

A comparison of the course the two injured drums followed was enlightening. The left middle ear became dry after treatment and the drum healed spontaneously within three weeks. The right drum, the one with the lesser rupture, remained unchanged in appearance through the three weeks period. There was absolutely no reaction to the injury, the drum remaining perfectly gray and normal in every way except for the slit-like aperture. Was this drum not healing because it lacked the stimulus that mild infection gave the other drum? It was clear that a cigaret paper application was indicated. This was accomplished, but a second application was necessary before the paper could be made to stick to the everted edges of the perforation. The drum then became very red. In two weeks, when the paper was removed, the perforation had been healed. Cases such as this help the physician to understand tympanic membrane physiology and to treat tympanic membrane rupture, not only from war causes but from any cause, in a new light.

SUMMARY

Report is made on 55 cases of tympanic membrane rupture caused by war blasts. Approximately half of the cases were infected and of these 2 developed mastoiditis. The importance of "dry" treatment in the early stages is emphasized. Small and moderately sized perforations which showed little tendency to heal were treated by the application of trichloracetic acid and an artificial drum of cigaret paper. A unique method of applying the paper is described. About 75 per cent of the perforations on which the paper was applied healed. An attempt is made to explain the mechanism of healing. Knowledge gained concerning the use of artificial drums to aid in the healing of war perforations of the tympanic

membrane can be utilized in certain cases in civilian practice.

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ABSTRACT OF DISCUSSION

Dr. Bert DeBord, Temple: Many of us in service had the opportunity to observe a large number of blast injuries of the ear. It was interesting to note that when the drum was perforated by the blast, there was frequently less cochlear damage than when the drum remained intact; also, that the edges of the perforations in some cases were inverted and in others everted. It is generally stated that 50 per cent of these perforations will close spontaneously, and Dr. Folbre's attainment of 75 per cent is commendable.

I have never used trichloracetic acid in these perforations, but I have applied 3 per cent silver nitrate sparingly to the margins of the perforation, and have had some success with the use of artificial drums.

Dr. J. D. Roberts, Longview: Closure of central perforation of the drum head has been carried out by the false drum method for a number of years, but because of the increase of this condition during the years of hostility, the subject has been foremost in our minds.

The most recent articles on this condition are by S. L. Fox* and S. Zurik.† Their technique is similar to that of Dr. Folbre. Zurik used 1 per cent silver nitrate and cigaret paper, while Fox used trichloracetic acid and Cargile's membrane. The method I have used with fair success is the application of 20 per cent silver nitrate to the margin of the perforation and addition of the false drum with a moist applicator. The material used has been mostly typewriter copy paper.

I agree with Dr. Folbre that this procedure is useful in civilian practice. Similar perforations are fairly common from fireworks, slaps on the ear, diving, and falls.

I still cling to the "bridge" theory, and I would like to emphasize the importance of obtaining a dry ear before application of the false drum. Satisfactory results from a marginal perforation should not be expected, for invariably a bone infection is present.

Dr. Herbert H. Harris, Houston: I consider Dr. Folbre's presentation of this subject excellent. Blast injuries to the ear drums became of interest to me while I was in the service because of the large number encountered. I was able to follow about 100 of these cases from shortly after the injury to the maximum improvement.

There were few cases, in fact I recall only 1, that persisted with a permanent perforation. Some of the ruptures of course were small, but many were quite large. Many times when the ears were first examined, only Shrapnell's membrane with remnants about the annulus could be seen. No local treatment to the ear was done until it became infected. Most of them did not become infected. I believe the excellent results which I obtained were due to two things: (1) patients were seen early and not under combat, and (2) penicillin or sulfa was started immediately. Some of the perforations did not close for three months, which I consider the maximum time to allow for repair or epithelization.

Recently I have seen 2 patients with large perforation of each ear as a result of the explosion at Texas City, who were not put on treatment for two days, and both of whom had foul drainage from the middle ears. These have done well, using both penicillin and streptomycin intramuscularly and local dry cleaning. Sulzbergers Iodine Dusting Powder was blown through the perforations daily. Now it is apparent that all the perforations will probably heal with the exception of one, about which it is a little too early to tell.

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DISCUSSION OF PROPOSED COMBINED CITY AND COUNTY HEALTH DEPARTMENTS

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County Health Officer, Dallas County
DALLAS, TEXAS

Agitation for a combined city and county government in Dallas County has erupted from time to time, but to date, no concrete plan to effect it has been suggested or adopted. The Dallas County Medical Society has had a committee to study a proposal for a combined city and county health department for more than a year. The Junior Chamber of Commerce has urged and recommended such a merger. Other organizations have been interested, but the most continuous and productive efforts have come out of the Health Council of the Dallas Council of Social Agencies. It is to be regretted that a contemplated survey is not under way or completed, so that the reasons that impel those concerned to seek such a change could be submitted more completely. Funds are now available for the survey, and plans are almost complete by which an intensive study will be made of the city and county health departments, the school health department, the Visiting Nurse Association, the Tuberculosis Association, and other local health agencies that may be brought under a single administrative head.

There are defects in the present arrangement under which the agencies named above operate—that, all of us admit. The proponents of the proposed combined unit believe that among the benefits are these:

(1) Administrative personnel of high professional character would be attracted since it would be necessary and proper to increase top salaries and give job security in keeping with the prestige inherent in a great, well organized, health unit.

(2) All the present public health functions would be available to the whole population in the county rather than a select few; new personnel such as a health educator, industrial hygienist, and a full time epidemiologist would be added.

(3) It is also believed that since measures for the care and prevention of disease are so closely related, no one service can be regarded as separate from the other. It must follow that by cooperation with the Southwestern

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Medical Foundation and College, research in maternal and child health, nutrition, cancer, geriatrics, and mental hygiene could be pursued with mutual effort and benefit.

(4) Benefit would accrue from increasing the number of nurses qualified to do general nursing, which would include some form of bedside care, especially in health services classified as tuberculosis, mental hygiene, old age, venereal disease, other communicable diseases, crippling conditions, cancer, rheumatic fever, nutrition, dental health, infant and maternal hygiene and the public health aspects of housing. The philosophy is that the public health nurse should have a dual capacity of educator and bedside nurse.

(5) Duplication of services would be eliminated, so that conservation of money and effort would result from a reduction in staff and travel mileage. The confusion as to responsibility in school health and communicable disease, now vested in the city for school purposes only, would be obviated by a single authority and one manner of handling. Duplication occurs in many other divisions, especially sanitation.

(6) Closer association with the hospital system, especially the tuberculosis unit and the isolation ward, would bring about a proper division of responsibility and control which is necessary for a well organized and properly functioning health department.

In spite of all the alleged benefits, certain obstacles are real and difficult to overcome. The agencies to be combined are well organized, have their own different sources of funds, and have developed permanent programs in their respective fields. Each takes pride in its own work. Therefore, it becomes mandatory to set up a new organization, legally constituted, properly financed, and well ordered as concerns responsibilities, duties, rights, and benefits. A report by Dr. Haven Emerson, called "Local Health Units for the Nation," states, speaking of Texas: "There is some provision for city-county and multi-county units but it is not very broad in its application. However, a good many units of this type have been organized, since the law does not specifically prohibit them." The report further states that "to provide good basic local public health service for the entire area of the state, the committee and state health officer jointly recommend 80 administrative units." Dallas is one of them—as a combined city-county unit. The consensus now is that present laws are inadequate, and a constitutional amendment is being drawn to be submitted to the Legislature at the next session. An enabling act, based on the constitutional act, will be sought, and in all probability a special county tax of 10 cents on $100 for public health purposes will be requested. Not all of us on the Health Council share the optimism of the majority that these things will be easily accomplished.

One great objection or obstacle to the present plans is that a large county population has been disregarded, continuing a cardinal defect in the old system under which no health facilities exist in Highland Park or University Park (Dallas). It may be that by mutual agreement such services will be extended to the populations of those cities, and such a plan deserves special consideration. In the same way, the health services for incorporated cities or towns in the county other than those named must be coordinated and administered by the administrative head of the combined unit. Very evident obstacles exist in imposing standard public health controls in these cities and towns, legally and otherwise.

Even though the total number of nurses from the combined agencies is greater than the eighty suggested by Dr. Emerson in his report, it needs to be demonstrated that they are fitted by experience or training to give the generalized nursing service mentioned as an alleged benefit. I believe that the number is far too small; there should be one nurse per 2,000 population for good work to be accomplished, whereas with eighty nurses there would be only one nurse per 5,000.

The matter of finance is an obstacle which would be resolved immediately with the passage of a special tax law of 10 cents per $100 property evaluation for the county. It is not suggested that the agencies to be combined lose their identity, but rather that the boards and organization be left intact to accept gifts or monies to be used as found necessary or feasible. Only the working personnel and their duties would be absorbed. Anything less than complete financial freedom and security would invite disaster, it is believed, and contractual agreements are further believed to be no more dependable than the political fortunes and vicissitudes of the political bodies involved.

Another obstacle is that of civil service. It is agreed that city employees should not lose the benefits that have or will accrue under their present employment. No concrete plan has been developed to provide the same protection to those from non-city agencies and departments who have not had such protection or rights. The experience of others who have consolidated units or agencies has been fairly well reviewed by the members of the Health Council and by me. Most reports are reassuring, but none of them sufficiently parallels the proposed combined unit in Dallas County to allow specific conclusions by

comparison. All city and county units that have been combined in Texas, except Bexar-San Antonio, are simple in comparison to the proposed unit. It is generally thought that they are weak, and that they are semi-permanent at best. Bexar-San Antonio Unit experience has left a great deal to be desired and many question the stable constitution of the unit.

From out-of-state experiences the Louisville-Jefferson County Unit is the unit that reflects more study, more combinations, and more services than any of the others. A great deal of planning in Dallas County has followed the Louisville-Jefferson plan. Simple combined units within the jurisdiction of a single city such as Seattle, where the City Health Department was combined with the Visiting Nurses Association, indicate the trend only and do not help very much in the solution of the problem at Dallas.

Other combinations such as Bremerton, Wash., and Eastchester-Westchester Counties, N. Y., have been reviewed. All of the units report favorable experiences.

The spirit of the professional groups and individuals involved, the organizations, voluntary or otherwise concerned, and especially those agencies affected has been fair, above board, and vibrant. Out of the combined study and discussion, progress will inevitably come. The departments to be so combined are not weak; they are strong. There is no friction between them. There is need of increased and improved health services for Dallas County. It is hoped that a dependable, strong, representative organization will emerge, of which all of us may be truly proud, and which may become a pattern for other agencies which may find it convenient or best to combine forces.

ABSTRACT OF DISCUSSION

Dr. J. W. Bass, Dallas: Dr. Duncan has pretty well presented the consensus in Dallas City and Dallas County with reference to city-county health units. There are many advantages to be gained from the consolidation of city-county health units if it can be done in a satisfactory manner. The only satisfactory method is the creation of a health district with uniform regulations and a local tax to support the unit. Working agreements between city and county governments which can last no longer than the elected officials who enter into such agreements would not be desirable in Dallas County. The unit should be established by an enabling act and a vote of the people. The enabling act must provide for civil service and retirement. A merit system established by administrative edict and with the approval of the legal department is not sufficient. The present law permitting the cooperation of the city and county with the State Department of Health in the formation of units may be desirable in counties and cities where neither the city nor county has adequate funds to operate a department alone, but such a working agreement would not be satisfactory for Dallas County because under such an agreement the health department employees of the City of Dallas at present would lose the civil service protection and retirement privileges now afforded them under the city government.

It is believed that a satisfactory method of unification for the city and county health departments of Dallas has the wholehearted support of city and county health officials and nonofficial health agencies in the city. It is hoped from the present study in Dallas a satisfactory plan for the combination of the city and county health departments will be developed.

Dr. G. E. Brereton, Dallas: Dr. Duncan has given some of the high points in a discussion which has been current in Dallas for the past two years—since the single health unit was suggested by a committee from the Dallas County Medical Society. This investigation was undertaken by a committee from the society in a constructive rather than an adversely critical spirit. Dr. Duncan referred to Southwestern Medical College and its relationship to the health department. The attitude of the college in this as in all other questions of welfare in the vicinity of Dallas is to be helpful whenever possible rather than to wish to control. This planning involves a very important step and should be as well founded as possible.

Dr. J. L. Goforth, Dallas: Dr. Duncan has presented a thought stimulating subject. His paper constitutes a detailed survey of the experience of combined city and county health units in other areas, and an excellent appraisal of the advantages and disadvantages to be considered in combining health facilities. As I see it, the advantages far outweigh the disadvantages. We live in a progressive age. The combining of city and county health departments on the basis proposed appears to me to have practical value and is considered a definite step forward.

Dr. L. P. Walter, Austin: At the last session of the Texas Legislature, a Health Unit Enabling Act was introduced. Although this bill had been approved by the State Medical Association, Texas Public Health Association, and State Board of Health, the measure failed to secure legislative approval. There is nothing in the law to prohibit the formation of health units in Texas, although the law, except in a few instances, does not specify in detail the procedure for organizing a modern health unit. Although there are certain definite objections to city-county and multiple city-county units, the advantages by far outnumber the disadvantages, and a wide experience over a long period of time with 47 health units in Texas has proved that city-county health units usually are operated more efficiently and economically than multiple overlapping agencies.

Dr. W. B. Nies, Fort Worth: Dr. Duncan has presented a fine paper. The plan to combine city, county, and school health departments is a forward step in public health. It is generally agreed that where possible all communities, especially the larger cities and counties, should finance and govern their own programs. There is a certain amount of duplication of services of the different agencies. The plan for Dallas County would reduce that to a minimum.

VETERANS STUDY MEDICINE

One of every thirty veterans in school under the G. I. Bill is studying medicine or related subjects, a Veterans Administration sampling of school-going veterans has disclosed.

Of the total of 1,825,000 veterans in schools, colleges, and universities on May 1, the survey showed 59,316 enrolled in all phases of medical training. Nearly 53,000 of this group were in colleges and universities; the remaining 6,500 were in other types of educational institutions studying nursing, x-ray procedures, and related subjects.

HOUSE TO HOUSE INSPECTIONS IN GENERAL SANITATION

AUSTIN E. HILL., A. B., M. D., M. P. H.
HOUSTON, TEXAS

An epidemic of dengue fever was averted and the incidence of typhus, typhoid, and dysentery were reduced in Houston during 1945. This was due to a house to house inspection of private premises for all types of sanitation. These inspections, which are continuing, are an outgrowth of the dengue fever control program inaugurated by the United States Public Health Service.

In 1942, the United States Public Health Service assigned a crew of assistant engineers, engineering aides, and consultants in entomology, to prevent a threatened outbreak of dengue fever in several South Texas cities, including Houston. No cases of dengue fever were reported in Houston during the war. This meant that the special group of workers were successful in their attempt to destroy breeding places of the aedes aegypti mosquito.

Home visits and an educational program during 1944, in the schools, clubs, churches, and other organizations, resulted in the removal of seven million tin cans. Also, thousands of automobile tires, buckets, bottles, and other fresh water containers were removed from the back yards of residences in Houston. This rubbish was piled on the curb and hauled away by specially assigned garbage trucks.

A group of United States Public Health Service engineers came to Houston in September, 1944, and discussed with city officials the possibility of extending the house to house inspections. The new program was to include not only dengue fever control, but typhus control and other general sanitation conditions. Broken sewers, overflowing septic tanks, poorly constructed privies, insanitary chicken yards, and open garbage cans were not to be overlooked. Houston was chosen as one of four cities to try the all-inclusive general sanitation program of house to house inspection. San Antonio, Savannah, Ga., and Charleston, S. C., were the other three cities chosen.

An agreement was made by the Houston Health Department to match the number of inspectors of the group were appointed as Public Health Service. The program began as scheduled January 1, 1945, with ten men of the Public Health Service, including a stenographer and a captain who was selected by both agencies to serve as a supervisor, and twelve city employees of Houston. Three foremen were chosen and three groups of six men each were assigned for house to house inspections in the residential areas.

Each inspector was assigned a block. Nothing about the premises was overlooked, including evidence of rats and mosquitoes inside of the houses. Flower pots, ice box drip pans, and other artificial water containers were checked for breeding of dengue fever mosquitoes. A written notice was given each householder, explaining the violations found and the corrections to be made. Pamphlets illustrating the prevention of dengue fever, typhus fever, typhoid, and dysentery were also distributed by the inspectors. The best inspectors of the group were appointed as follow-up men to reinspect bad conditions reported by the first inspectors. If conditions were not corrected after the second notice, court cases were filed.

Poliomyelitis in Houston reached almost epidemic proportions in June, 1945. As a result twenty-three additional inspectors were employed, making a total of forty-five.

DDT was made available about this time, and screens, garbage cans, and areas around the cans were sprayed at every house where a case of polio was reported. Outside privies were also sprayed with this so-called "magic insecticide."

In 1945, 150,729 private premise inspections were made and 128,258 health violations were found. For example, 1,101 broken sewers were found and 993 were corrected; 12,580 rat runs in garages, houses, and other buildings on private premises were dusted with a 10 per cent DDT powder; 10,599 packages of rat poison were sold to householders by employing boys who rode bicycles as salesmen.

When health hazards were brought to the attention of house occupants for the first time, 75 per cent of the violations were corrected. Another 15 per cent were corrected after a follow-up visit.

Fire hazards were noted and reported to the fire marshal. Other conditions were referred to supervisors of street and bridge, water repair, sewer repair, and garbage divisions.

Advantages of such a program include the following:

1. The inspection eliminates health hazards which are impossible to find by any other method. For example, during the latter part of the war, tenants were told that, if they complained about open sewers or insanitary conditions, the place would be sold and they would be forced to move. As a result, not half of the broken sewers were reported.

2. Maps can be made showing areas where insanitary conditions exist, so that a constant check can be made.

3. This program may have been directly

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responsible for reducing typhus, typhoid, dysentery, and intestinal parasites.

4. House to house visitation is an excellent means of educating the public because it is a sure way of getting information directly to the householders. Such information might otherwise never be made available to the public.

5. Such a program causes closer working relations between various city departments.

Disadvantages include:

1. It is an expensive program. In 1945 it cost Houston $34,000, plus approximately $30,000 United States Public Health Service money.

2. People moving in and out create a never ending task of education and clean-up.

City Health Department.

ABSTRACT OF DISCUSSION

Dr. W. L. Kitchens, San Benito: Dr. Hill has given a summary of accomplishments in Houston during 1945. I agree that a house to house inspection is the ideal way in which to correct insanitary conditions in any community.

We have had one or two clean-up campaigns in our community each year for many years, using residential inspections and the block system. Dr. Hill's inspections appear to have been excellent, but very expensive. What is needed is some method of educating the people in sanitation, so that house to house inspections and clean-up campaigns will no longer be necessary.

I am particularly interested in the educational results of Dr. Hill's work, and wish to ask some questions. (1) After the intensive house to house inspections in 1945, what was the general sanitary condition of Houston the first few months of 1946? (2) How did the 1945 program compare, educationally, with the 1944 school, church, and club program? (3) Will one year of house to house inspections suffice to educate the people in sanitation, or will this program have to be continued indefinitely? (4) Is this program adaptable to all health units, or just in large cities like Houston?

Cameron County has an area of about 40 miles square; a population of 100,000; seven incorporated cities and towns, ranging in population from 2,000 to 30,000; and about 20,000 homes. The health unit budget is only $60,000, which permits a personnel of only 5 sanitarians, 7 nurses, and no inspectors.

Assuming that a minimum of twenty-four minutes be required for the inspection of a residence an inspector could make only twenty inspections daily. It would require 1,000 days for one inspector to inspect the homes in Cameron County, or one year for four inspectors. To be educational, these inspections should be made at least monthly, which would require forty-eight inspectors at an extra expense of about $86,400. If I could get $86,400 I would begin this program immediately, and make it an educational campaign. I am sure that it would be money well spent, but not a complete educational success.

In my opinion, the only way in which an educational program can be carried out is for the public schools to require each school child to study sanitation for three or four years, beginning at about the age of 8 years. We must educate the youth of our country in sanitation, even though it be at the expense of geography, athletics, and arithmetic.

I have neither the $86,400 nor a sanitary department in the schools, so I am now using what I think is the next best program. As soon as possible after we receive notice of the presence of some communicable disease, one of our personnel is sent to the home of the patient to make an investigation of the source and transmission of the disease; discuss isolation, quarantine, home sanitation, and personal hygiene; advise concerning vaccination, immunization, and prophylactic treatments; and make a complete sanitary survey of not only the premises, but of the food, milk, water supply, and waste disposal. Then I borrow a crew from the malarial and typhus control division (which should be part of the health unit), to use whatever insecticides or fumigants are indicated, by spraying or dusting, or both, and by poisoning in case of rat and flea infestation, not only the premises of the patient, but all premises in the immediate vicinity, and at the source of the disease, if it is located.

This program is proving to be not only an educational campaign for disease control, but it keeps the work of the health unit before the public eye. I recommend it to all units financially or otherwise unable to adopt the house to house inspection program.

Dr. Hill, closing: Thank you, Dr. Kitchens, for your discussion. Following are answers to your questions:

1. We found Houston cleaner than ever before except in a few areas where the lowest class of people live.

2. The 1945 house to house program was far superior educationally to the 1944 program of making talks in schools, churches, and clubs.

3. In a static population, the house to house inspections may not have to be continued except in the poorest sections. We believe, however, it is worth while to continue the program with as few as five men making inspections.

4. This program is adaptable to all health units. It is more difficult of operation in a large than in a small city. In a small town one inspector can do wonders in a year. We believe this is one of the most important programs in our department and we expect to continue it.

BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination (Part I) for all candidates will be held by the American Board of Obstetrics and Gynecology in various cities of the United States and Canada on Friday, February 6, 1948, at 2:00 p. m. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year.

A number of changes in regulations have been put into effect by the Board.

Closing date for applications for the 1948 examinations will be November 1, 1947.

Further information is available from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh 6.

FELLOWSHIPS OFFERED BY COLLEGES OF PHYSICIANS

The American College of Physicians has announced that a limited number of fellowships in medicine will be available from July 1, 1948 to June 30, 1949. These fellowships are designed to provide for research training either in the basic medical sciences or in their application to clinical investigation. They are for physicians in the early stages of their preparation for a teaching and investigating career in internal medicine. The stipend will be from $2,200 to $3,000.

Application forms will be supplied on request to the College, 4200 Pine Street, Philadelphia 4, and must be submitted in duplicate not later than November 1, 1947.

MISCELLANEOUS

COMING MEETINGS AND CLINICS

State Medical Association of Texas, Houston, April 26-29, 1948. Dr. B. E. Pickett, Sr., Carrizo Springs, President; Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

American Medical Association, House of Delegates, Cleveland, January 5-6, 1948; Special Scientific Session, Cleveland, January 7-8, 1948; Regular General Session, Chicago, June 21-25, 1948. Dr. Edward L. Bortz, Philadelphia, President; Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

NATIONAL AND REGIONAL

American Academy of Allergy, St. Louis, December 15-17, 1947. Dr. Will C. Sprain, New York, President; Dr. Theodore L. Squier, 424 East Wisconsin Ave., Milwaukee, Secretary.

American Academy of Dermatology and Syphilology, Chicago, December 6-11, 1947. Dr. Edward A. Oliver, Chicago, President; Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo. N. Y., Secretary.

American Academy of Neurological Surgery, Colorado Springs, October 9-11, 1947. Dr. William S. Keith, Toronto, Canada, President; Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, October 12-17, 1947. Dr. Alan C. Woods, Baltimore, President; Dr. W. L. Benedict, Mayo Clinic, Rochester, Minn., Secretary.

American Academy of Pediatrics, Dallas, December 8-11, 1947. Dr. Lee F. Hill, Des Moines, Iowa, President; Dr. C. G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association for Thoracic Surgery, Quebec, 1948. Dr. Alton Ochsner, New Orleans, President; Dr. Brian Blades, George Washington University School of Medicine, Washington, D. C., Secretary.

American Association of Genito-Urinary Surgeons. Dr. C. E. Burford, St. Louis, President; Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago, Secretary.

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons. Dr. A. D. Campbell, Montreal, President; Dr. J. R. Bloss, 418 11th St., Huntington 1, W. Va., Secretary.

American College of Physicians, San Francisco, April 19-23, 1948. Dr. Hugh J. Morgan, Nashville, Tenn., President; Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secretary.

American College of Radiology, Chicago, June 19-20, 1948. Dr. Edwin C. Ernst, St. Louis, President; Dr. Mac F. Cahal, 20 N. Wacker Drive, Chicago 6, Secretary.

American College of Surgeons. Dr. Irvin Abell, Louisville, Ky., President; Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secretary.

American Congress of Physical Medicine. Dr. H. Worley Kendall, Chicago, President; Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secretary.

American Dermatological Association. Dr. Paul A. O'Leary, Rochester, Minn., President; Dr. Harry R. Foerster, 208 E. Wisconsin Ave., Milwaukee, Secretary.

American Gastro-Enterological Association, Atlantic City, May 31-June 1. Dr. Henry L. Bockus, Philadelphia; Dr. Dwight L. Wilbur, 655 Sutter St., San Francisco, Secretary.

American Gynecological Society. Dr. Edmund A. Schumann, Philadelphia, President; Dr. Howard Taylor, Jr., 842 Park Ave., New York 21, Secretary.

American Hospital Association. Mr. John H. Hayes, New York, President; Mr. George P. Bugbee, 18 E. Division St., Chicago, Executive Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, April 7-9, 1948. Dr. Lyman G. Richards, Brookline, Mass., President; Dr. C. S. Nash, 277 Alexander St., Rochester 7, N. Y., Secretary.

American Neurological Association. Dr. George Wilson, Philadelphia, President; Dr. H. Houston Merritt, Montefiore Hospital, New York 67, Secretary.

American Ophthalmological Society, Hot Springs, Va., May 16-19, 1948. Dr. Henry C. Haden, Houston, President; Dr. W. S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Orthopedic Association. Dr. Robert I. Harris, Toronto, Canada, President; Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

American Otological Society. Dr. B. J. McMahon, St. Louis, President; Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse 3, N. Y., Secretary.

American Pediatric Society. Dr. Grover F. Powers, New Haven, Conn., President; Dr. Henry G. Poncher, 1819 W. Polk St., Chicago 12, Secretary.

American Proctologic Society, Chicago, June, 1948. Dr. George H. Thiele, Kansas City, Mo., President; Dr. Vernon G. Jeurink, 1612 Tremont Pl., Denver 2, Secretary.

American Psychiatric Association, Portland, Ore., May 9-14, 1948. Dr. Winfred Overholser, Washington, D. C., President; Dr. Leo H. Bartemeier, General Motors Bldg., Detroit, Secretary.

American Public Health Association, Atlantic City, October 6-10, 1947. Dr. Harry S. Mustard, New York, President; Dr. R. M. Atwater, 1790 Broadway, New York 19, Secretary.

American Roentgen Ray Society. Dr. Raymond C. Beeler, Indianopolis, President; Dr. H. Dabney Kerr, University Hospital, Iowa City, Secretary.

American Society of Anesthesiologists, New York, December 4-5, 1947. Dr. Edward B. Tuohy, Rochester, Minn., President; Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 22, Secretary.

American Society of Clinical Pathologists, Chicago, October 28-30, 1947. Dr. Stanley P. Reimann, Philadelphia, President; Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

American Surgical Association. Dr. Elliott C. Cutler, Boston, President; Dr. W. M. Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Urological Association, Boston, May 17-20, 1948. Dr. Charles McMartin, Omaha, Neb., President; Dr. T. D. Moore, 899 Madison Ave., Memphis 3, Tenn., Secretary.

Association of American Physicians, Atlantic City, May 4-5, 1948. Dr. A. H. Gordon, Montreal, President; Dr. H. M. Thomas, Jr., 1201 N. Calvert St., Baltimore 2, Secretary.

Central Neuropsychiatric Association, Galveston, October 17-18, 1947. Dr. Clarence E. Van Epps, Iowa City, President; Dr. William C. Menninger, 3617 W. Sixth Ave., Topeka, Kan., Secretary.

International College of Surgeons, U. S. Chapter, Chicago, September 28-October 4, 1947. Dr. Herbert Acuff, Knoxville, Tenn., President; Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

National Tuberculosis Association. Dr. James R. Reuling, Bayside, N. Y., President; Dr. H. Stuart Willis, 1790 Broadway, New York 19, Secretary.

Radiological Society of North America, Boston, November 30-December 5, 1947. Dr. Lowell S. Goin, Los Angeles, President; Dr. D. S. Childs, Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Medical Association, Baltimore, November 24-26, 1947. Dr. E. L. Henderson, Louisville, Ky., President; C. P. Loranz, Empire Building, Birmingham, Ala., Secretary-Manager.

Southern Psychiatric Association, Birmingham, Ala., October 13-14, 1947. Dr. Newdigate M. Owensby, 384 Peachtree St., N. E., Atlanta, Ga., Secretary.

Southern Surgical Association, Hollywood, Fla., December 9-11, 1947. Dr. Frank S. Johns, Richmond, Va., President; Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Southwest Allergy Forum, Oklahoma City, Okla., April 5-6, 1948. Dr. Herbert J. Rinkel, Kansas City, Mo., President; Dr. Fannie Lou Leney, 1200 N. Walker, Oklahoma City, Okla., Secretary.

Southwest Medical Association, Phoenix, Ariz., November 6-8, 1947. Dr. Leslie M. Smith, El Paso, President; Dr. Louis W. Breck, 520 Montana St., El Paso, Secretary.

STATE

Texas Association of Medical Anesthetists, Houston, April 26-29, 1948. Dr. Robert A. Miller, San Antonio, President; Dr. Harvey C. Slocum, 928 Strand, Galveston, Secretary.

Texas Association of Obstetricians and Gynecologists, Fort Worth, November 21-22, 1947. Dr. J. E. Kanatzer, Wichita Falls, President; Dr. Julius McIver, 714 Medical Arts Building, Dallas, Secretary.

Texas Chapter, American College of Chest Physicians, Houston, April 26-29, 1948. Dr. H. Frank Carman, Dallas, President; Dr. Charles J. Koerth, Kerrville, Secretary.

Texas Club of Internists. Dr. N. D. Buie, Marlin, President; Dr. Victor E. Schulze, San Angelo, Secretary.

Texas Hospital Association, Dallas, March 4-6, 1948. Mr. Thomas H. Head, San Angelo, President; Mrs. Ruth Barnhart, 2210 Main St., Dallas, Secretary.

Texas Neuropsychiatric Association, Terrell, Fall, 1947. Dr. A. Hauser, Houston, President; Dr. David Wade, 604 Capital National Bank Bldg., Austin, Secretary.

Texas Orthopedic Society, Houston, April 26-29, 1948. Dr. Walter Stuck, San Antonio, President; Dr. Ruth Jackson, 3629 Fairmount St., Dallas, Secretary.

Texas Pediatric Society, Houston, October 17-18, 1947. Dr. J. R. Lemmon, Amarillo, President; Dr. John E. Ashby, 3610 Fairmount, Dallas, Secretary.

Texas Public Health Association, Houston, February, 1948. Dr. S. W. Bohls, San Antonio, President; Mr. Earle W. Sudderth, Dallas County Health Department, Court House, Dallas, Secretary.

Texas Radiological Society, Temple, January 17, 1948. Dr. C. A. Stevenson, Temple, President; Dr. R. P. O'Bannon, 650 Fifth Ave., Fort Worth, Secretary.

Texas Railway and Traumatic Surgical Association, Houston, April 26-29, 1948. Dr. Linwood H. Denman, Lufkin, President; Dr. Ross Trigg, First National Bank Bldg., Fort Worth, Secretary.

Texas Society for Mental Hygiene, El Paso, March 11-13, 1948. Dr. Ozro T. Woods, Dallas, President; Mrs. Elizabeth F. Gardner, 1617 Watchhill Road, Austin 21, Executive Secretary.

Texas Society of Gastroenterologists and Proctologists, Houston, April 26-29, 1948. Dr. George Underwood, Dallas, President; Dr. Carl Giesecke, 1602 Nix Professional Bldg., San Antonio, Secretary.

Texas Society of Ophthalmology and Otolaryngology, Houston, December 5-6, 1947. Dr. W. E. Vandevere, El Paso, President; Dr. E. D. Dumas, 425 Medical Arts Bldg., San Antonio, Secretary.

Texas Society of Pathologists, Galveston, January 25, 1948. Dr. D. A. Todd, San Antonio, President; Dr. C. T. Ashworth, Southwestern Medical College, Dallas, Secretary.

Texas State Heart Association, Houston, April 26-29, 1948. Dr. DeWitt Neighbors, Fort Worth, President; Dr. Merritt B. Whitten, 1421 Medical Arts Bldg., Dallas, Secretary.

Texas State Urological Society, Dallas, February 2, 1948. Dr. Jo C. Alexander, Dallas, President; Dr. Hub Isaacks, Medical Arts Bldg., Fort Worth, Secretary.

Texas Surgical Society, Galveston, October 7-8, 1947. Dr. Walter Stuck, San Antonio, President; Dr. Truman G. Blocker, University of Texas Medical Branch, Galveston, Secretary.

Texas Tuberculosis Association. F. K. Dougharty, Liberty, President; Miss Pansy Nichols, 700 Brazos, Austin, Executive Secretary.

DISTRICT

Second. Big Spring, District Society, Big Spring, October 30, 1947. Dr. R. B. G. Cowper, Big Spring, President; Dr. H. A. Briggs, Midland, Secretary.

Third, Panhandle, District Medical Society, Lubbock, October 14-15, 1947. Dr. C. E. High, Pampa, President; Dr. Kenneth Flamm, Amarillo, Secretary.

Fourth District Society, Coleman, October 22, 1947. Dr. Glenn H. Ricks, Brady, President; Dr. J. C. Young, Coleman, Secretary.

Fifth and Sixth Districts Society, Dr. Kleberg Eckhardt, Corpus Christi, President; Dr. Charles Tennison, Nix Professional Building, San Antonio, Secretary.

Seventh, Austin, District Society, Spring, 1948. Dr. M. I. Brown, Austin, President; Dr. David Wade, 604 Capital National Bank Bldg., Austin, Secretary.

Eighth, Ninth and Tenth Districts, South Texas, Society. Dr. T. O. Woolley, Orange, President; Dr. James Greenwood, Jr., 518 Medical Arts Bldg., Houston 2, Secretary.

Eleventh District Society, Jacksonville, October 29, 1947. Dr. L. L. Travis, Jacksonville, President; Dr. C. B. Young, 929 S. Confederate, Tyler, Secretary.

Twelfth, Central Texas, District Society, Waco, January 13, 1948. Dr. W. Howard Wells, Waco, President; Dr. H. F. Connally, Jr., Amicable Bldg., Waco., Secretary.

Thirteenth, Northwest District Society, Mineral Wells, November 11, 1947. Dr. Frank Hodges, Abilene, President; Dr. A. D. Roberts, Medical Arts Bldg., Fort Worth, Secretary.

Fourteenth District Society. Dr. H. Frank Carman, Dallas, President; Dr. James Jeter, Ennis, Secretary.

Fifteenth, Northeast Texas, District Society. Dr. Joe Roberts, Longview, President; Dr. S. W. Tenney, Marshall, Secretary.

CLINICS

Dallas Southern Clinical Society, Dallas, March 15-18, 1948. Miss Thelma J. Webb, Medical Arts Bldg., Dallas 1, Executive Secretary.

International Postgraduate Medical Assembly of Southwest Texas, San Antonio, January 27-29, 1948. Dr. W. W. Bondurant, Jr., 711 E. Houston St., San Antonio, President.

North Texas and Southern Oklahoma Fall Postgraduate Conference, Wichita Falls, October 14, 1947. Dr. K. W. McFatridge, Hamilton Bldg., Wichita Falls, Secretary.

Oklahoma City Clinical Society, Oklahoma City, October 27-30, 1947. Executive Secretary, 512 Medical Arts Bldg., Oklahoma City.

Post Graduate Medical Assembly of South Texas, Houston, December 1-3, 1947. Secretary, 229 Medical Arts Bldg., Houston.

TEXAS TUBERCULOSIS ASSOCIATION

Approximately two hundred physicians and representatives of tuberculosis associations, health units, and welfare agencies were present September 15-16 in Dallas for the annual meeting of the Texas Tuberculosis Association. Meetings of the Texas Chapter, American Trudeau Society and the Texas Conference of Tuberculosis Secretaries were also held.

Dr. Robert J. Anderson, Washington, assistant chief of the Tuberculosis Control Division, U. S. Public Health Service, and Mr. James G. Stone, New York, director of program development of the National Tuberculosis Association, were the featured guest speakers. Both emphasized the necessity for cooperation and coordination among community agencies—health units, tuberculosis associations, hospitals, schools, social welfare agencies, and rehabilitation agencies—if an efficient tuberculosis control program is to be developed. In addition to a general meeting at which Dr. Anderson and Mr. Stone spoke, section meetings on medicine and on public health were held. The medical section heard discussions of anatomy, pathology, and physiology of the chest; aspergillosis, empyema, and bronchial adenomas; and the use of antibiotics in the treatment of chest diseases. Case-finding procedures and inter-agency cooperation were the primary topics for the public health section.

Officers and members of the executive committee of the Texas Tuberculosis Association, elected September 16, are as follows: Mr. F. K. Dougharty, Liberty, president; Dr. David McCullough, Kerrville, first vice-president; Dr. Elliott Mendenhall, Dallas, second vice-president; Mr. J. W. Butler, Texas City, secretary; Dr. Z. T. Scott, Austin, treasurer; Drs. J. Edward Johnson, Austin; Sim Hulsey, Fort Worth; James E. Dailey, Houston; R. G. McCorkle, San Antonio; and C. M. Hendricks, El Paso, members of the executive committee. Announcement was also made of the nineteen representative directors and twenty-four directors-at-large who will serve a three-year term beginning September, 1947. Twenty-seven other directors are serving unexpired terms.

The Texas Chapter of the American Trudeau Society held a business session at lunch September 16, electing the following officers: Drs. Elliott Mendenhall, Dallas, president; James E. Dailey, Houston, president-elect; R. G. McCorkle, San Antonio, vice-president; and Tom R. Jones, Houston, secretary.

Members of the Texas Conference of Tuberculosis Secretaries also met for luncheon on September 16. Officers who will serve during the coming year include Mrs. Louis Gayer, San Angelo, president; Mrs. Mildred B. Cobb, Beaumont, vice-president; Mr. Robert C. Milligan, Galveston, secretary-treasurer; and Mrs. Gertrude Gardiner, El Paso; Mrs. P. R. Watts, Port Arthur; Mrs. Fern Montgomery, Longview; and Mr. Dale W. Knotts, Dallas, members of the executive committee.

LIBRARY NOTES

PACKAGE SERVICE

The package library consists of collections of reprints and other periodical material on various subjects, prepared for lending to members of the Association. Requests for packages should be addressed "Library, State Medical Association of Texas, 1404 W. El Paso Street, Fort Worth 3, Texas." Twenty-five cents in stamps should be enclosed with the request to cover postage and part of the expense of collecting the material. Packages are allowed to remain in the hands of the borrower for 14 days.

ACCESSIONS

The following additions were made to the Library during September:

Reprints received, 471.

Journals received, 179.

New York, Grune & Stratton—Schindler: Gastritis.

Chicago, Year Book Publisher—Selinger: Office Treatment of the Eye; Trussell: Trichomonas Vaginalis and Trichomoniasis.

Philadelphia, W. B. Saunders—McCombs: Internal Medicine in General Practice; Dorland: American Illustrated Medical Dictionary.

New York, The McMillan Company—Smillie: Preventive Medicine and Public Health.

New York, Chemical Publishing Co.—Rideal and others: A Symposium of Colloid Science.

New York, The Commonwealth Fund—Hospital Care in the United States.

Baltimore, Williams & Wilkins—Smillie: Injuries of the Knee Joint.

Springfield, Charles C. Thomas, Publisher—Harrison: Ocular Therapeutics.

Philadelphia, J. B. Lippincott Company—Bierring: Rypins' Medical Licensure Examinations, 6th edition.

SUMMARY OF SERVICE

Local users, 54.	Borrowers by mail, 48.
Items consulted, 194.	Packages mailed, 56.
Items taken out, 265.	Items mailed, 527.

Total number of items consulted and loaned, 985.

MOTION PICTURE FILM LIBRARY

Motion picture films on medical subjects, 16 mm., both silent and sound, some in color, and suitable for either medical or lay audiences, are available for loan to county medical societies, hospital staffs, or individual physicians, on request. Borrowers will be required to pay only the cost of shipment of the films, by express, with insurance, and for any damage to films while in the hands of the borrower.

Requests for films should be addressed to "Motion Picture Film Library, State Medical Association of Texas, 1404 West El Paso Street, Fort Worth 3, Texas." A list of available films, with descriptions, will be furnished on request.

The following motion picture films were loaned by the Film Library of the State Medical Association of Texas during September:

Accident Services (Available through the courtesy of British Information Services, Houston)—Dr. William R. Berk, Dallas.

Anemias (Available through the courtesy of Lederle Laboratories, Inc., New York)—Ragland Clinic-Hospital, Gilmer, and Scott & White Hospital, Temple.

Animated Hematology (Available through the courtesy of the Armour Laboratories, Chicago)—Dr. William R. Berk, Dallas.

Appendicitis in Childhood (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Dr. William R. Berk, Dallas, and Dr. C. D. Gipson, Three Rivers.

Breech Extraction (Available through the courtesy of Mead Johnson & Company, Evansville, Ind.)—Dr. William R. Berk, Dallas.

Chest Diseases, Surgery (Available through the courtesy of British Information Services, Houston)—Dr. C. D. Gipson, Three Rivers, and Dr. C. C. McDonald, Tyler.

Cloud in the Sky, Spanish (Available through the courtesy of the Texas Tuberculosis Association, Austin)—Dr. Rush McMillin, Lampasas.

Folvite in the Treatment of the Anemias (Available through the courtesy of Lederle Laboratories, Inc., New York)—Scott & White Clinic, Temple.

Heart Diseases, Oxygen Therapy (Available through the courtesy of Linde Air Products Company, New York)—Bee-Live Oak-McMullen Counties Medical Society, Three Rivers.

Human Fertility (Available through the courtesy of the Ortho Products, Inc., Linden, N. J.)—Dr. William R. Berk, Dallas.

Immunization Against Infectious Diseases (Available through the courtesy of Lederle Laboratories, Inc., New York.)—Bee-Live Oak-McMullen Counties Medical Society, Three Rivers.

Mastoid Surgery (Available through the courtesy of Dr. Louis Daily, Houston)—Dr. William R. Berk, Dallas.

Nasal Sinusitis (Available through the courtesy of E. Fougera & Company, Inc., New York)—Dr. William R. Berk, Dallas, and Dr. C. D. Gipson, Three Rivers.

Parkinsonism (Available through the courtesy of Lederle Laboratories, Inc., New York)—Dr. George Ehni, Temple.

Radical Orchidectomy (Available through the courtesy of the War Department, Washington)—Dr. William R. Berk, Dallas.

Regional Anesthesia (Available through the courtesy of Winthrop Chemical Company, New York)—Dr. William R. Berk, Dallas.

TB, Diagnostic Procedure (Available through the courtesy of the Texas Tuberculosis Association, Austin)—Smith County Medical Society, Tyler.

Thoracic Surgery (Available through the courtesy of the War Department, Washington)—Dr. R. Nesbit, Crystal City, and Dr. William R. Berk, Dallas.

Your Children's Eyes (Available through the courtesy of British Information Services, Houston)—Dr. C. D. Gipson, Three Rivers.

NEW MOTION PICTURE FOR THE FILM LIBRARY

The Motion Picture Film Library of the State Medical Association has received the following film, which is available for loan upon request:

The Role of Gastroscopy in the Diagnosis and Treatment of Gastric Pathology. 16 mm., sound, running time, 30 minutes. (Available through the courtesy of Harrower Laboratory, Inc., Glendale, Calif.) This film contains a critical visual evaluation of diagnostic methods and antacid therapy.

LIBRARY NEEDS

The journals listed are needed by the Library of the State Medical Association to complete volumes for binding. Any of these numbers will be acceptable either as a gift or for purchase. It is preferable that the Library, 1404 West El Paso Street, Fort Worth 3, be notified regarding items available, and the prices of such items, if any, before shipment is made.

Journals needed by the Library of the State Medical Association are as follows:

American Journal of Obstetrics and Gynecology, Vol. 34, No. 4 (Oct.) 1937.

Annals of Internal Medicine, Vol. 29, No. 1 (July) 1946.

Journal of Laboratory and Clinical Medicine, Vol. 26, No. 1 (Oct.) 1940, Vol. 27, No. 5 (Feb.) 1941, and Vol. 28, No. 14 (Nov.) 1942.

Southern Medical Journal, Vol. 39, Nos. 10, 12 (Oct., Dec.) 1946.

BOOK REVIEWS

[1]**Fundamentals of Clinical Neurology.** By H. Houston Merritt, M. D., Professor of Clinical Neurology, College of Physicians and Surgeons, Columbia University; Fred A. Mettler, M. D., Ph. D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University; and Tracy Jackson Putnam, M. D., Professor of Neurology and Neurological Surgery, College of Physicians and Surgeons, Columbia University. Cloth, 289 pages. Price, $6.00. Philadelphia, The Blakiston Company, 1947.

Merritt, Mettler, and Putnam, in a cooperative writing effort, have created a text in neurology designed for "what any practitioner must know concerning problems of diseases of the nervous system commonly encountered in general practice." The organization of this work follows the usual pattern of technique for examination, the setting forth of basic principles of anatomy and neurophysiology, followed by a discussion of neurologic diseases from the standpoint of pathology and clinical neurology. Controversial matters have been omitted, which makes the book immensely more practical to the busy practitioner. Illustrations include numerous anatomic diagrams, photographs of pathologic specimens, and patients with various neurologic syndromes. This book is highly recommended.

[1]Reviewed by L. D. Borough, M. D., Fort Worth.

[2]**Radiology for Medical Students.** By Fred Jenner Hodges, M. D., Professor and Chairman, Department of Roentgenology, University of Michigan; Isadore Lampe, M. D., Associate Professor, Department of Roentgenology, University of Michigan; and John Floyd Holt, M. D., Assistant Professor, Department of Roentgenology, University of Michigan. Cloth, 424 pages. Price, $6.75. Chicago, The Year Book Publishers, Inc., 1947.

Diagnostic and therapeutic radiology is given in two parts. The far-reaching effect of Roentgen's amazing discovery upon medical practice in general is vividly impressed upon the readers of this excellent book. Basic facts pertaining to roentgen diagnosis and therapy are recorded clearly and precisely, with appropriate illustrations, photographs, and tables.

In the diagnostic section a full chapter is devoted to roentgenologic equipment and findings, which include adequate discussion of the tools of the radiologist and of routine procedures and records. Separate chapters are devoted to the head, the spine and extremities, the thorax, the gastro-intestinal tract, and the genito-urinary tract. Proper emphasis is placed on normal roentgen findings as well as on pathologic findings.

The introductory chapter on therapeutic radiology gives the student a general view of the clinical application of radium and roentgen therapy in malignant and nonmalignant lesions. Technical factors relating to roentgen rays and radium are discussed. Sufficient details are given regarding the effects of radiation on normal and abnormal tissues in terms of tissue destruction and repair, radiosensitivity, optimum dosages, and radiocurability. Infections and miscellaneous conditions are considered in a separate chapter.

In the other six chapters on therapy, the organs and systems are grouped in such a way as to enable orderly discussion of tissue structure and its reaction to radiation.

This book will prove a handy and useful reference to the practitioner and to the radiologist, as well as to the medical student.

[3]**An Integrated Practice of Medicine.** A Complete General Practice of Medicine from Differential Diagnosis by Presenting Symptoms to Specific Management of the Patient. By Harold Thomas Hyman, M. D. 1184 illustrations, 305 in color. 319 differential diagnostic tables. Four volumes, 4131 pages. Price, $50.00. Philadelphia and London, W. B. Saunders Company, 1946.

This rather exhaustive compilation covers a tremendous amount of material in varied fields of medicine. The volumes are divided somewhat as to systems of the body with the fourth volume covering the fields of physical diagnosis, laboratory methods, therapeutics, pharmaco-therapy, major and minor surgery, and prognosis. The format and technical production of the book is of the first class. In addition to the four volumes, there is a fifth which is an index under the headings of illustrations, differential diagnosis, and general index. This makes the entire work more useful and accessible.

The material covered is up-to-date with a discussion regarding penicillin, streptomycin, sulfa drugs, and the newer methods of diagnosis. There are many excellent illustrations and beautiful colored photographs of the conditions discussed. There is an atlas of electrocardiograms with many characteristic curves portrayed. Unfortunately no discussion of unipolar or precordial leads is included and very little regarding theory, the interpretation being made by the author.

In our opinion, an attempt has been made to cover too many and varied fields of medicine. Anyone attempting to discuss so much would be open to criticism as space inevitably precludes the chance of covering effectively all of the fields. The material is readable and well arranged. A tremendous amount of knowledge is gathered together in four volumes.

Numerous tables and other outlines to simplify and condense the material will no doubt prove beneficial to the medical student and busy practitioner.

[4]**Theories on Mutations and the Formation of Some Benign and Malignant Tumors.** By Manuel D. Hornedo, B. Sc., M. D. Cloth, 63 pages. Price $2.00. New York, The William-Frederick Press, 1947.

The first two parts of this book deal with some genetic aspects of cells and possible means by which mutations may arise: by death of dominant gene units, by excessive development of gene units, by linking together of dominant gene rosettes with the loss of daughter-gene units through a permeable chromosome membrane. The author emphasizes the breaking up of gene rosettes with formation of wild genes which may enter other cells and in some way produce mutation in the invaded cells leading to neoplasia. Except for mentioning the finding of small chromosomal bodies in malignant tumor cells, the author presents no convincing evidence, nor does he cite any references in behalf of this suggestion.

Brief reference is made to the relation of wild genes to viruses, but the possible role of viruses in the genesis of neoplasma is largely neglected.

The author discusses a prophylactic vaccine, "anti-malignin," which he has apparently prepared, and which is said to have powers in preventing the development of malignant tumors. It is recommended that "the best way to fight or control malignant or cancerous tumor formation is to prevent it through the use of a prophylactic vaccine." In this day and time when amazing advances are being made in the chemical and biological aspects of neoplastic cells, and when substances possessing definite anti-neoplastic properties are being introduced in the experimental and clinical fields of neoplastic disease, a physician hesitates to disregard any suggested means of directly antagonizing neoplastic cells. On the other hand, in the case of "anti-malignin" he can have only a reserved opinion in view of the lack of any experimental evidence to support it and in view of the questionable basic principles upon which it is founded.

[5]**Gastroenterology in General Practice.** By Louis Pelner, M. D., Associate Attending Physician, Greenpoint Hospital, Brooklyn, N. Y., with the Collaboration of Louis A. Held, M. D., Attending Roentgenologist, Beth Moses Hospital, Brooklyn, N. Y., and Contributions from Alexander Lewiten, M. D., Consulting Roentgenologist, Norwegian Public Health Service, New York; Samuel Waldman, M. D. Associate Attending Physician, Greenpoint Hospital, Brooklyn, N. Y., and Siegfried W. Westing, M. D., Roentgenologist, Brooklyn Cancer Institute. Fabricoid, 285 pages. Price, $7.50. Springfield, Illinois, Charles C. Thomas, Publisher, 1946.

"Gastroenterology in General Practice" is a marvelously compact volume which will be interesting to specialists as well as to general practitioners. Any physician may consider himself fortunate to have this book within reach. Dr. Pelner has apparently read voluminously of gastro-intestinal literature and gives a creditable bird's eye-view of the subject that might embrace more than 3,000 pages.

[2]Reviewed by Glenn D. Carlson, M. D., Dallas.
[3]Reviewed by Maurice M. Scurry, M.D.; Richard M. Smith, M.D., and William H. Potts, M.D., Dallas.
[4]Reviewed by C. T. Ashworth, M. D., Dallas.
[5]Reviewed by George W. Underwood, M.D., Dallas.

This volume is appropriately divided into 38 chapters, some of which are exceedingly brief. Nevertheless, the subject matter is presented with great clarity. Proper consideration is given to psychosomatic influences in illness, with four brief chapters devoted to this subject.

All persons interested in gastroenterology should have access to some more elaborate treatise, but this monograph undoubtedly will be greatly appreciated by medical students and practicing physicians.

[6]**Practical Physiological Chemistry.** By Philip B. Hawk, Ph. D., President, and Bernard L. Oser, Ph. D., Director, Food Research Laboratories, Inc., Long Island City, N. Y., and William H. Summerson, Ph. D., Associate Professor of Biochemistry, Cornell University Medical College, New York. Cloth, 1,323 pages. Twelfth edition. Price $10.00. Philadelphia, The Blakiston Company, 1947.

This text is an excellent reference volume for any practicing physician. It is clearly written, has excellent illustrations, and covers methods of analysis simply and completely. It also includes simple interpretations of laboratory data from the clinical standpoint. Anyone who performs laboratory work in the office should find this text useful. It cannot be recommended too highly.

[7]**Gastritis.** By Rudolph Schindler, M. D., F. A. C. P., Clinical Professor of Internal Medicine (Gastroenterology), College of Medical Evangelists, Los Angeles, Calif. Cloth, 470 pages, with 96 black and white illustrations and 12 gastroscopic pictures in color. Price, $8.75. New York, Grune & Stratton, 1947.

The publication of this comprehensive new book by one of the principal investigators of this much debated disease, gastritis, is a notable event. The pathologic as well as the clinical aspects are fully dealt with. Of many hundreds of histologic sections prepared by the author, he has chosen 55 that represent the normal and the inflamed stomach. These are studied and described in detail. The clinical discussion is based on the clinical and gastroscopic observations of more than 2,500 cases of uncomplicated gastritis.

The illustrations are excellent. In addition to 96 large reproductions of photographs, there are 2 color plates that present 12 gastroscopic pictures of normal mucosa, chronic gastritis, tumor-forming gastritis, and atropic gastritis with carcinoma. A careful study of this book gives a more thorough knowledge of gastric disease and of some of the more distressing complications encountered in the treatment of stomach disorders.

NEWS

Contributions to this department will be appreciated. News should be of general medical interest, such as public health activities, new hospitals, personal items of more than local value, etc. News for a particular number of the JOURNAL should be in the hands of the Editor not later than the fifteenth of the preceding month.

Fellows of the American College of Surgeons who were initiated September 12 in New York include the following Texans: Drs. Sydney S. Baird, Dallas; John L. Barnett, San Antonio; James T. Billups, Houston; Rexford G. Carter, Austin; Henry Celaya, San Antonio; Marvin A. Childers, Jr., San Antonio; Thomas D. Cronin, Houston; Sidney Galt, Dallas; Charles H. Hallson, Houston; Herbert H. Harris, Houston; Claude D. Joyce, Jr., Palestine; William T. Lace, Fort Worth; Harry B. Macey, Temple; Jack E. Maxfield, Wichita; James D. McCall, Mineral Wells; William W. McKinney, Houston; Isaac S. McReynolds, Houston; Walter S. Morse, Houston; William F. Parsons, Fort Worth; Britton E. Pickett, Jr., Crystal City; Norborn B. Powell, Houston; George E. Pryor, Jr., Stamford; Harvey M. Richey, Waco; Thomas H. Sharp, San Antonio; Paul B. Stokes, Crockett; John A. Wall, Jr., Houston; Seth L. Witcher, Clifton; and June Yates, Corpus Christi.

Medical Corps R.O.T.C. units have been authorized for forty-three approved medical schools throughout the United States for the 1947-1948 academic year, more than double the units in operation last year, according to *The Journal of the American Medical Association*. Baylor University College of Medicine, Houston, and the University of Texas School of Medicine, Galveston, are included in the list for this year. The Medical Department of the Army hopes to have a unit in every approved medical school by 1948.

Members of the R.O.T.C. units receive instruction in knowledge of the Army in general and the Medical Department in detail, including problems of military preventive medicine. In addition to attending classes during the regular school session, members of the units must participate in a summer training period of six weeks at some time after their sophomore year.

The Army is also conducting graduate training at the R.O.T.C. schools to provide specialists in the various medical fields. Such training is available through residencies, fellowships, or postgraduate courses. For these specialty courses Baylor is approved for internal medicine and the University of Texas for anesthesiology.

Baylor University Hospital, Dallas, began a campaign October 15 to raise $1,000,000 for the construction of a new 400-bed unit to be named for the late George W. Truett, world renowned Baptist minister, reports the Dallas *News*. The memorial Fund which Dallasites are being asked to raise will be combined with $3,000,000 already available to erect a seven-story hospital unit designed to become the main edifice of Baylor Hospital. Mr. W. C. McCord, president of Southland Life Insurance Company, is general chairman of the campaign.

The first Texas hospital to offer intern training for administrators with the approval of the American Hospital Association, Baylor Hospital has had more applicants for such training than it can accommodate, reports Lawrence Payne, the administrator. The Dallas *News* states that each administrator intern will serve in twenty different departments, from bookkeeping to carpentry, during his year of apprenticeship following graduation from a school of hospital administration.

Southwestern Medical College, Dallas, recently furnished six physicians to conduct a survey of health conditions on the Navajo Indian reservation at Window Rock, Ariz. The team of Dallas physicians is the second to be sent on a health survey by the Secretary of the Interior, according to information from the American Medical Association. In July a team of five Chicago physicians was sent to Alaska to make a similar survey among Eskimos, Indians, and Aleuts. In December, ten or twelve physicians will be sent to Puerto Rico and the Virgin Islands.

The Dallas team is composed of Drs. Ozro T. Woods, chairman; Arthur Grollman, internist and nutritionist; Martin Buehler, internist; Francis Reichsman, tuberculosis specialist; Salmon Halpern, pediatrician; and John Henry Fish, ophthalmologist.

The M. D. Anderson Hospital for Cancer Research, Houston, on September 1, moved its first ambulatory cancer patients into its new annex. The annex which

[6]Reviewed by Carl A. Moyer, M.D., Professor of Experimental Medicine, Southwestern Medical College, Dallas.
[7]Reviewed by Cecil O. Patterson, M.D., Dallas.

is about a block from the main building and is large enough for 30 patients, is the first such convalescent home established in connection with a cancer hospital, according to M. D. Anderson Hospital officials.

The two-story brick building was purchased and remodeled as a gift to the Texas Medical Center by Mr. and Mrs. Lamar Fleming, Jr., Houston, at a cost of approximately $45,000. Other gifts of cash and furnishings were received from individuals and club groups to increase the value to approximately $50,000. The Medical Center Board of Trustees turned the building over to the cancer hospital for this special use.

Two types of ambulatory patients will be housed in the annex: out of town cancer sufferers during periods of examination and diagnosis and patients released from the hospital but needing postoperative care or treatment. Free patients and part-pay patients will be accepted.

PERSONALS

Dr. Charles Phillips, and *Dr. R. W. Shirey*, Temple, presented a paper at the International Congress on Cancer Research in St. Louis on September 4, according to the Temple *Telegram*. *Dr. C. M. Pomerat*, professor of cytology at the University of Texas Medical Branch, Galveston, also presented a paper, according to the Galveston *News*.

Dr. G. W. Worthington, Marathon, was awarded a fifty-year button by the Alpine Lodge 766, A. F. & A. M. in August, informs the Alpine *Avalanche*, to mark a half century of membership in the lodge.

Dr. Edward H. Cary, Dallas, was one of five Texans honored September 6 by a group of Hillsboro citizens at their annual barbecue for outstanding leaders who have served Texas notably, states the Hillsboro *Mirror*.

Dr. Raymond Gregory, professor of medicine, and *Dr. Eric Ogden*, professor of physiology at the University of Texas Medical Branch, Galveston, have been appointed to the medical advisory council of the American Foundation for High Blood Pressure, reports the Galveston *News*.

Dr. D. K. Robison, Rocksprings, has recently resumed his practice following the amputation of one of his legs.

MARRIAGE

Dr. John Albert Garcia, Austin, recently married Miss Mary Sue Morrison, Houston. The couple will reside in Austin.

BIRTHS

To *Dr. and Mrs. William W. Wood, Jr.*, Fort Worth, a son, William Walter, III, September 4. Dr. and Mrs. Webb Walker, Fort Worth, are the maternal grandparents.

To *Dr. and Mrs. Thomas J. Vanzant*, Houston, a son, Robert Courtney, August 4.

SOCIETY NEWS

Brown-Comanche-Mills-San Saba Counties Society

September 8, 1947

(Reported by P. M. Wheelis, Secretary)

Diagnosis and Medical Management of Diseases of the Gallbladder—James A. Greene, Houston.

Newer Aspects in Treatment of Tuberculosis—Daniel E. Jenkins, Houston.

Twenty-seven members and guests were present for an outdoor barbecue held by the Brown-Comanche-Mills-San Saba Counties Medical Society at Lake Brownwood, September 8. The scientific program outlined above was presented.

A tuberculosis committee composed of C. C. Bullard, chairman (three years), F. M. Pope (two years), and T. A. Carrigan (one year) was appointed. All members of the committee are residents of Brownwood. The society voted, upon motion by Joe McFarlane, Brownwood, seconded by H. B. Allen, Brownwood, to approve the use by the Brownwood-Brown County Health Unit of fluoroscope, x-ray, and pneumothorax machines and to accept the offer of Dr. Carrigan to serve in a tuberculosis clinic operated by the health unit. A request by M. L. Fuller, director of the health unit, that the society sponsor a home for patients with open cases of tuberculosis was referred to the tuberculosis committee.

Dallas County Society

September 11, 1947

(Reported by W. W. Fowler, Secretary)

A question and answer session under the chairmanship of Henry M. Winans was held September 11 in Dallas by Dallas County Medical Society with fifty-six members present. Other physicians on the panel who answered questions submitted by the membership were Tinsley R. Harrison, Carl Moyer, D. P. Morris, and Joseph M. Hill.

It was announced that Blue Cross hospitalization is now available to members of the society, their families, office employees, and their families through a group plan organized by the executive office of the society.

President John G. Young commended George Jones, Glenn Carlson, Glen Stayer, Frank Kidd, J. S. Fine, John Dunlap, and J. B. Howell for helping with physical examinations at the Boy Scout camp.

Robert Jarman Rowe was accepted as a member by transfer from Kaufman County Medical Society.

Jefferson County Society

September 8, 1947

(Reported by Mr. E. Mittendorf, Executive Secretary)

Resection of the Lungs for Suppurative Conditions (lantern slides)—James E. Dailey, Houston.

Jefferson County Medical Society met September 8 in Port Arthur with thirty-two in attendance. D. M. English, Beaumont, president, announced that the Port Arthur Independent School District had adopted the policy of paying for health examinations for its teachers, allowing each teacher to select the physician. The school authorities had requested the society to recommend a standard fee. The matter had been referred to the committee on industrial medicine and hygiene, which suggested a fee of $3.

Eugene H. Lindsey, Beaumont, reporting for the legislative and public health committee, said that the county grand jury had requested the cooperation of the society in the formulation of plans to control the use of barbiturate drugs. Upon motion by L. T. Pruit, Beaumont, seconded by Dr. Lindsey, the society went on record as being "in accord with any plan to tighten up on the dispensing of the barbiturate drugs."

Mr. A. H. Gayer, representing the Blue Cross hospitalization plan, presented the plan for physicians and their employees. The matter was referred to the legislative and public health committee.

The society granted a leave of absence for three years to Bedford F. Pace, Nederland, to engage in a residency in dermatology and syphilology.

A number of communications were read.

Kimble-Mason-Menard-McCulloch Counties Society

September 3, 1947

(Reported by J. S. Anderson, Secretary)

Early Diagnosis in Tuberculosis (lantern slides)—H. M. Anderson, San Angelo.

Use of Anticoagulants in Treatment of Coronary Thrombosis—G. L. Neersta, San Angelo.

Two guests from San Angelo presented papers at the September 3 meeting of Kimble-Mason-Menard-

McCulloch Counties Medical Society in Brady. H. M. Anderson discussed early diagnosis of tuberculosis, showing slides of roentgenograms illustrating early lung involvement. He also referred to the use of streptomycin in the treatment of tuberculosis. G. L. Nesrsta explained the use of anticoagulants in the treatment of coronary thrombosis. A round-table discussion followed.

Lubbock-Crosby Counties Society

September 2, 1947

(Reported by O. R. Hand, Secretary)

Sympathectomy in the Treatment of Arterial Hypertension (lantern slides)—Gordon F. Madding, San Angelo.

Twenty-nine members and three visitors were present for the meeting September 2 in Lubbock of the Lubbock-Crosby Counties Medical Society.

Gordon F. Madding, San Angelo, presented a paper in which he recommended sympathectomy in the treatment of arterial hypertension only after adequate medical treatment had failed to give benefit. Patients with systolic blood pressure of 150 or greater or diastolic pressure of 50 or greater, with sustained hypertension, under 60 years of age and preferably under 50, and with nonprotein nitrogen of not more than 45 mg. per 100 cc. of blood may be subjected to the treatment. Dr. Madding discussed the various techniques used. He reported a mortality of 1 per cent or less, with no postoperative complications, and good results in a large percentage of cases.

Pecos-Jeff Davis-Presidio-Brewster Counties Society

September 7, 1947

(Reported by W. E. Lockhart, Secretary)

Present Trends in Management of Cancer—J. Richard Fuchlow, El Paso.

Pecos-Jeff Davis-Presidio-Brewster Counties Medical Society met September 7 for dinner and a program at the Paisano Hotel, Marfa. Arrangements for the meeting were made by Louis Cartall, who with Mrs. Cartall entertained at cocktails at his home prior to dinner. Seven members and twelve visitors were present.

J. Richard Fuchlow, El Paso radiologist, spoke on the management of cancer and explained the cancer clinic in El Paso.

After the regular meeting, a clinic was held at the Searls Hospital. The case of a woman 35 years of age with chest pain, fever, pleural effusion, and atelectasis of the left lower lobe was presented. Dr. Fuchlow expressed the opinion that a bronchial obstruction, probably carcinoma, was present and suggested bronchoscopy.

Tarrant County Society

September 2, 1947

(Reported by W. P. Higgins, Jr., Secretary)

Rh Factors—J. M. Hill, Dallas.
Rh Factor in Pediatrics—C. O. Terrell and Edward M. Wier, Fort Worth.
Rh Factors in Obstetrics—Theron Funk, Fort Worth.
Dr. William A. Rounds: Biographical Sketch—Frank McKee, Fort Worth.

Ninety members of Tarrant County Medical Society and four visitors were present September 2 in Fort Worth for a scientific meeting stressing the Rh Factor. J. M. Hill, Dallas, and C. O. Terrell, Edward M. Wier, and Theron Funk, Fort Worth, discussed various aspects of the subject. Frank McKee gave a biographical sketch of Dr. William A. Rounds.

Upon motion by L. O. Godley, chairman of the public health advisory committee, seconded by J. W. Garnett, the society endorsed the activities of the Tarrant County Chapter, Texas Society for Crippled Children. Another motion by Dr. Godley calling for endorsement of the Tarrant County Spastic Society was tabled pending further investigation of the organization.

Clive R. Johnson, formerly of Rochester, Minn.; William W. McKinney and Stanley C. Smith, formerly of Houston; and Dudley A. Reekie, formerly of San Antonio, were elected to membership upon transfer.

September 16, 1947

(Reported by W. P. Higgins, Jr., Secretary)

Animo Acids and Proteins—J. H. Hook, Fort Worth.
Discussion—C. O. Terrell, Jr., and W. G. Phillips, Fort Worth.
Retinoscopy and Essential Hypertension—C. R. Lees, Fort Worth.
Discussion—Frank Halpin, C. C. Garrett, and William M. Crawford, Fort Worth.

Tarrant County Medical Society, meeting September 16 in Fort Worth, heard the scientific program outlined above. Edgar S. Ezell, Harry Leaffer, Vern Rohrer, and Eugene Steinberger were elected to membership upon application. Ninety members and four visitors were present.

Taylor-Jones Counties Society

September 9, 1947

Clinical-Pathological Conference on Rheumatic Heart Disease—Robert H. Mitchell, Fort Worth, leader; W. B. Adamson, Guy Pattillo, and D. G. Strole, Abilene; and Truman Terrell, Fort Worth.
Problems of a District Councilor—R. G. Baker, Fort Worth.

Taylor-Jones Counties Medical Society held its first meeting of the fall September 9 in Abilene, with thirty-seven members present. Robert H. Mitchell, Fort Worth, led a clinical-pathological conference on rheumatic heart disease, with W. B. Adamson, Guy Pattillo, and D. G. Strole, all of Abilene, and Truman Terrell, Fort Worth, participating in the discussion. R. G. Baker Fort Worth, Councilor of the Thirteenth District, also spoke.

Harold M. Gibbons, formerly of California; J. F. Hocott, formerly of Stephens County; and Hinton H. Hamilton were elected to membership, the first two upon transfer and Dr. Hamilton upon application.

AUXILIARY NOTES

Officers of the Woman's Auxiliary to the State Medical Association of Texas: President, Mrs. Edward C. Ferguson, Beaumont; President-Elect, Mrs. S. M. Hill, Dallas; First Vice-President, Mrs. A. N. Boyd, Houston; Second Vice-President, Mrs. H. P. Ledford, Wichita Falls; Third Vice-President, Mrs. A. L. Delaney, Liberty; Fourth Vice-President, Mrs. W. Frank Armstrong, Fort Worth; Recording Secretary, Mrs. M. A. Ramsdell, San Antonio; Corresponding Secretary, Mrs. W. G. Wallace, Beaumont; Publicity Secretary, Mrs. J. F. Campbell, Fort Worth; Treasurer, Mrs. J. Guy Jones, Dallas; Parliamentarian, Mrs. Paul Brindley, Galveston.

STATE EXECUTIVE BOARD MEETING SEPTEMBER 12, 1947

The meeting of the Executive Board of the Woman's Auxiliary to the State Medical Association of Texas was called to order by the President, Mrs. Edward C. Ferguson, Beaumont, at 10:30 a.m., aboard the Texas Company yacht, Ava, on the Neches River near Beaumont.

The regular order of business was modified to permit Dr. George Schenewerk, Dallas, chairman of the Public Relations Committee of the State Medical Association, to speak first. He stressed that "the Board of Trustees originates and develops all the matters of policy and it is the duty of the Public Relations Committee to interpret and support these policies." Dr. Schenewerk discussed the objectives of the committee and observed that "the greatest single factor in the public relations potential of the A. M. A. is the ten point national health program." Dr. Schenewerk requested that the Auxiliary make the establishment of a clipping bureau one of its major projects. This would require the appointment of a chairman with committees all over the state.

Mrs. Ferguson thanked Dr. Schenewerk for his fine address, and introduced Mr. Phillip R. Overton, Austin, general counsel of the State Medical Association, who spoke on the legislative program, substituting for Dr. J. B. Copeland, San Antonio, chairman of the Legislative Committee of the State Medical Association. Mr. Overton also brought messages from Dr. B. E. Pickett, Sr., Carrizo Springs, President of the State Medical Association; Dr. T. C. Terrell, Fort Worth, chairman of the Board of Trustees, and Dr. Merton M. Minter, San Antonio, vice-chairman of the Board of Trustees.

Mrs. Ferguson thanked Mr. Overton for his speech, and the meeting recessed for landing to permit Dr. Schenewerk and Mr. Overton to leave the boat.

When the meeting was resumed, the invocation was given by Mrs. P. R. Denman, Houston.

Mrs. Fred Sutton, Beaumont, gave the address of welcome, which was responded to by Mrs. George Turner, El Paso. Mrs. O. M. Marchman, Dallas, extended greeting from the past presidents.

Mrs. S. M. Hill, Dallas, president-elect, in a short message reemphasized the importance of public relations, citing the methods used in Dallas, such as the health museum, as recommended procedures.

Tribute was paid Mrs. John T. Moore, Houston, deceased, by Mrs. S. H. Watson, Waxahachie.

Minutes of the May Board meeting in Dallas were read and approved.

Various communications were read by the secretary pro tem: the announcement of five physicians named by Dr. B. E. Pickett, President of the State Medical Association, to the Advisory Committee to the Woman's Auxiliary; a letter from Mrs. Eustace A. Allen, Atlanta, Ga., President of the Woman's Auxiliary to the A. M. A., expressing regret that she was unable to attend this meeting; and a letter from Mrs. G. V. Brindley, Temple, enclosing a card from Mrs. H. B. Trigg, Fort Worth, concerning the cancer campaign.

Reports of officers and committee chairmen followed.

Mrs. J. Guy Jones, Dallas, treasurer, reported cash on hand $13,676.78.

Mrs. W. G. Wallace, corresponding secretary, Beaumont, stated that stationery had been printed and made available, and enumerated letters and invitations she had sent.

Mrs. E. H. Marek, Yoakum, moved that the Board ratify the history as reported in the JOURNAL (July 1947, pp. 220-221). The motion, seconded by Mrs. P. R. Denman, Houston, carried.

Mrs. A. N. Boyd, Houston, took the chair while the President gave her report. Mrs. Ferguson reviewed activities at the 1947 (twenty-fifth) annual meeting of the Woman's Auxiliary to the American Medical Association in Atlantic City, which she had attended last June. The American Medical Association was celebrating its one hundredth anniversary at the same time and place. She reported that there was a registration of 2,205 Auxiliary members; that Texas ranked third in membership; and that Texas was one of four state auxiliaries having public relations meetings in each local auxiliary. Mrs. Ferguson stated that Mrs. George Turner, El Paso, read the convention rules, and Mrs. Scott Applewhite, San Antonio, was finance chairman. Mrs. Turner was elected to serve as constitutional secretary. A complete report of the meeting appeared in the August, 1947, *Bulletin*.

Recommendations for handling annual reports, sent in writing by Mrs. M. A. Ramsdell, San Antonio, recording secretary, were read by Mrs. Dan Russell, San Antonio, secretary pro tem, who moved the acceptance of the recommendations as read. Mrs. F. F. Kirby, Waco, seconded the motion, which carried.

Mrs. Ferguson, the President, gave her report on work done thus far.

Mrs. Ferguson resumed the chair and called for further reports of officers and committee chairmen.

Mrs. A. N. Boyd, Houston, first vice-president, urged all county membership chairmen to increase membership. She offered concrete suggestions for accomplishing the goal of "give every doctor's wife a chance to become a member of the auxiliary."

Mrs. M. A. Ramsdell, San Antonio, recording secretary, who was absent, sent her report, stating that copies of the May, 1947, Board meeting have been placed in the files and have been published in the TEXAS STATE JOURNAL OF MEDICINE (July, 1947, pp. 199-225); also that she had served as a member of a committee from the Auxiliary which met with the Executive Council of the State Medical Association in Fort Worth, August 3.

The importance of physical examinations was stressed in the report sent by Mrs. H. P. Ledford, Wichita Falls, second vice-president.

Mrs. A. L. Delaney, Liberty, third vice-president, presented her plans for increasing interest in *Hygeia*. She stated that she would employ a three letter campaign—suggestions, persuasion, evaluation.

Mrs. W. Frank Armstrong, Fort Worth, fourth vice-president, said that she would relay program suggestions to county chairmen as she receives them from the American Medical Association.

Mrs. L. S. Thompson, Dallas, chairman of the Public Relations Committee, requested the help and cooperation of each member, and promised to avail herself of every opportunity to further the cause of public relations.

As chairman of the George Plunkett Red Fund, Mrs. Joe Foster, Houston, announced a book value on hand of $5,242.64.

Mrs. O. M. Marchman, Dallas, chairman of the Memorial Fund, gave a resume of the history and operation of the fund, and said that there is now approximately $10,000 in the fund.

Mrs. J. J. Truitt, Houston, chairman of Exhibits, offered some rules to follow in the preparation of exhibits for the convention in Houston in April, 1948.

A member of the Committee on Archives, Mrs. F. F. Kirby, Waco, explained that the committee is trying to standardize the form of reports sent to the State Auxiliary. She offered definite points to be observed in such reports.

In the report which Mrs. Marvin Duckworth, Cuero, chairman of Research to the Southern Medical Auxiliary, sent, she urged members to cooperate in the compilation of material suitable for publication by the Southern Medical Auxiliary.

Mrs. J. C. Terrell, Stephenville, member of the Bulletin Committee, reported that the committee will offer a prize of $10 to be given to the district having the most subscriptions to the *Bulletin*. Mrs. W. H. Bridges, Goose Creek, suggested that the Bulletin prize be based on the percentage rather than the number sold. The President agreed.

Mrs. O. W. Robinson, Paris, explained the nature of her duties as chairman of Memorial Service.

Mrs. William Hibbitts, Texarkana, gave the report for the Budget and Finance Committee in the absence of the chairman, Mrs. Scott Applewhite, San Antonio. Following an explanation of the necessity of a revision of the budget as accepted at the May Post-Convention Board meeting, and a discussion of ways and means to be adopted for securing the increase in funds thereby incurred, the parliamentarian, Mrs. Paul Brindley, Galveston, ruled that the proposed budget could be accepted tentatively. Following a motion by Mrs. Hibbitts, seconded by Mrs. Marvin Graves, Houston, which carried, the following tentative budget was adopted:

REVISED BUDGET FOR 1947-1948

Working balance—from dues	$1,468.00
Disbursements:	
National Dues	734.00
President's Expense	400.00
First Vice-President	15.00
Fourth Vice-President	10.00
Recording Secretary	10.00
Treasurer	30.00
Auditor	35.00
Stationery	75.00
Typing (membership list)	10.00
Printing of program	70.00
Printing of folders for School of Instruction	25.00
Miscellaneous	54.00
	$1,468.00

Mrs. E. H. Marek, Yoakum, chairman of the Post-war Planning Committee, requested that the council women encourage each auxiliary to include the study of prepayment medical care plans and the recruitment of nurses in its year's work.

Council women and county presidents were recognized and gave outlines of their plans.

Mrs. R. C. Bellamy, Daisetta, moved the acceptance of reports. Mrs. L. S. Thompson, Dallas, seconded the motion, and it carried.

Mrs. Joe Foster, Houston, spoke for herself and Mrs. Marvin Graves, Houston, regarding the two student loan funds. Mrs. Graves moved that the Student Loan Fund of $10,000 be put in trust and be enlarged to include the George Plunkett Red Fund at the end of the year 1947-1948. The motion, seconded by Mrs. S. F. Harrington, Dallas, carried. Mrs. Foster moved that at the end of the year 1947-1948 the George Plunkett Red Student Loan Fund become a division of the proposed Student Loan Trust Fund. Seconded by Mrs. P. H. Frenzel, Donna, the motion carried.

The President instructed the secretary pro tem to read a letter from Dr. B. E. Pickett, Sr., Carrizo Springs, President of the State Medical Association, expressing the desire of the Association to work with the Auxiliary and extending his appreciation for the support given by the Auxiliary.

Mrs. Ferguson appointed a committee to compile the reports: Mesdames R. C. Bellamy, Daisetta; Rufus Simpson, Beaumont; and L. R. Byrd, Port Arthur.

Mrs. J. Guy Jones, Dallas, presented a bill of $123.25 for stationery, due Dr. Edward C. Ferguson, Beaumont, who had paid it for the Auxiliary. Mrs. P. H. Frenzel, Donna, moved that the bill be paid. Seconded by Mrs. J. J. Truitt, Houston, the motion carried.

Mrs. O. M. Marchman, Dallas, recommended that the matter of raising the dues be referred to the Revisions Committee for action at the next Board meeting. The motion, seconded by Mrs. A. B. Pumphrey, Fort Worth, carried.

Mrs. Ferguson thanked the Board members for coming; thanked the Texas Company for use of the yacht; and expressed appreciation to Mrs. W. G. Wallace, Beaumont, corresponding secretary; Mrs. Fred Sutton, Beaumont, president of the Jefferson County Auxiliary; Mrs. John Carter, Beaumont, council woman for District 10; Mrs. Rufus Simpson, Beaumont, publicity chairman; and each member of the Jefferson County Auxiliary for helping with the arrangements for and entertainment of the Board.

Mrs. S. H. Watson, Waxahachie, expressed the appreciation of the Board for the gracious hospitality of Mrs. Ferguson and the Jefferson County Auxiliary.

Adjournment was then taken.

Auxiliary members in attendance at the Executive Board meeting were guests of the President, Mrs. Edward C. Ferguson, for luncheon on the Texas Company yacht. A no host buffet supper at Hotel Beaumont the evening of September 11 was an additional feature of entertainment. Jefferson County Auxiliary officers and their husbands as well as State Board members and their husbands received at the latter affair.

MRS. DAN RUSSELL,
Secretary Pro Tem.

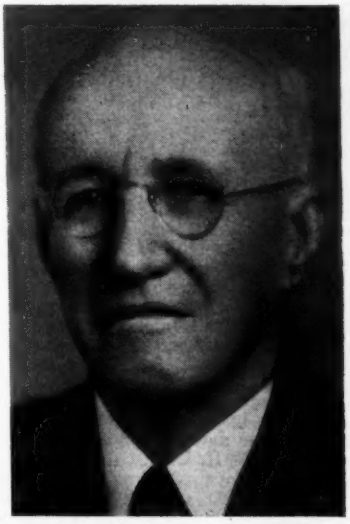
AUXILIARY NEWS

Eastland-Callahan Counties Auxiliary was organized August 27 at Eastland with ten charter members. Following a dinner held jointly with the medical society, the women met under the chairmanship of Mrs. P. M. Kuykendall, Ranger, council woman of the Thirteenth District. The following officers were elected: Mesdames E. R. Townsend, Eastland, president; C. L. Jackson, Ranger, vice-president; and E. E. Addy, Jr., Cisco, secretary. The auxiliary will continue to meet on the same date as the medical society.

Orange County Auxiliary met in September in the home of Mrs. T. O. Woolley, Orange, with Mesdames Woolley, M. E. White, and Leo J. Peters as hostesses. After a business session refreshments were served. —Mrs. L. J. Peters, Jr.

DEATHS*

Dr. Edgar Melvin Carman, for more than thirty-five years a practicing physician in Clay, Jack, and Montague Counties, Texas, died August 17, 1947, of angina pectoris at the home of a daughter in Gladstone, N. Mex.



DR. E. M. CARMAN

Dr. Carman, son of Lewis Phillip and Catherine (Stretch) Carman, was born November 9, 1871, in Williamstown, Mo. He attended the schools of Kirksville, Mo., and the Northern Missouri State College at Kirksville, from which he secured a teacher's certificate. He taught school for several years before beginning the study of medicine. From 1901 until 1911 he was in practice in Red Oak, Ellis County, Texas. He then moved to Vashti, Clay County, where he was in general practice until his retirement shortly before his death.

Since 1906 Dr. Carman had been a member of the

*An obituary ordinarily will not be published more than four months after date of death. Cooperation in reporting deaths of physicians and in furnishing appropriate biographical material promptly is solicited.

State Medical Association and American Medical Association, first through Ellis County Medical Society and then through Clay-Montague-Wise Counties Medical Society. He was president of the latter organization in 1942. He was a member of the Methodist church, Woodmen of the World, Odd Fellows, and Masonic Order.

Dr. Carman married Miss Anna Pearl Jacobs in Kirksville, Mo., November 25, 1895. His wife preceded him in death December 29, 1946. Survivors include a son, Ralph G. Carman, Shreveport, La.; two daughters, Mrs. Esther Baldridge, Gladstone, N. Mex., and Mrs. Hazel Hoy, Albuquerque, N. Mex.; seven grandchildren; and three great grandchildren.

Dr. James Harvey Edgar, Richland, Texas, died at his home August 25, 1947, of chronic myocarditis and general debility.

Born March 24, 1874, in Titus County, Dr. Edgar was the son of Charles W. and Elizabeth Edgar. He attended the Navarro County schools and was graduated in 1900 from the medical department of old Fort Worth University. He later did postgraduate work at the New York Polyclinic. Upon his graduation from medical school, Dr. Edgar began practice in Richland, where he was active until the time of his death.

DR. JAMES HARVEY EDGAR

From 1906 through 1939 Dr. Edgar was a member of the Navarro County Medical Society, State Medical Association, and American Medical Association. He was a Master Mason and a member of the Baptist Church. For many years he was postmaster of Richland and operated a drug store.

Surviving Dr. Edgar are his wife, the former Miss Sallie M. Hill, whom he married January 21, 1907, at Richland; one son, James H. Edgar, Jr., Corsicana; three daughters, Mrs. E. A. Foster, Jr., New Castle, Okla.; Mrs. R. L. Arnold, Jr., Corsicana; and Mrs. S. R. Frost, Richland; and six sisters, Mrs. Lee Jones, Mrs. J. B. Bush, and Mrs. Jessie Humphries, all of Corsicana; Mrs. Lee England and Mrs. Mollie Blood, both of Richland; and Mrs. W. H. Evans, Ruidosa, N. Mex.

Dr. George Becker Cornick, San Antonio, Texas, died of tuberculosis August 28, 1947, in San Angelo.

Dr. Cornick was born November 14, 1894, at Knickerbocker, Texas, the son of Dr. Boyd and Louise (Postel) Cornick. The elder Dr. Cornick was a pioneer in the treatment of pulmonary diseases, and at San Angelo operated one of the first tuberculosis sanatoriums in Texas. The younger Dr. Cornick attended the San Angelo public schools, Rice Institute at Houston, and the University of Texas at Austin, before receiving his medical education at the University of Texas School of Medicine, Galveston, from which he was graduated in 1919. While at medical school, Dr. Cornick was in the Naval Reserve. He served an internship and residencies at the New Haven General Hospital, New Haven, Conn.; Willard Parker Hospital, New York, where he specialized in contagious diseases; and Children's Hospital, St. Louis. In 1921 Dr. Cornick went as a member of the American Relief Administration, under the direction of Herbert Hoover, to Russia to help with the relief program. He was stationed at Tzaritzin (now Stalingrad) and with six other physicians was responsible for distributing $75,000,000 worth of food and medical supplies throughout the southeastern portion of European Russia. Following the completion of this work, Dr. Cornick studied in a children's clinic at Vienna under von Pirquet, originator of the scarification test for tuberculosis, and in The Children's, Great Ormond Street Hospital, London, before returning to the United States. From 1923 until 1939 Dr. Cornick practiced pediatrics in San Antonio. He became ill and resided in San Angelo for about a year before resuming his practice in San Antonio. In 1944 he was again forced to give up his work and return to San Angelo.

Continuously since 1924 Dr. Cornick had been a member of Bexar County Medical Society, the State Medical Association, and the American Medical Association. He was secretary of the Section on Medicine and Diseases of Children of the State Association in 1935. He was a member of the Texas Pediatric Society, American Academy of Pediatrics, and Southern Medical Association. He was a diplomate of the American Board of Pediatrics. He helped found and was active in the work of the Junior League Clinic in San Antonio. He was a member of the Methodist Church. He had long been a member of the American Relief Administration Association and was recently invited to serve on its governing body, but declined because of his failing health. He was known as a wise personal counselor and for his penetrating but kind witticisms.

Dr. Andrew Gregg Copeland, Timpson, Texas, died June 8, 1947, of cancer of the throat.

The son of Mr. and Mrs. J. A. Copeland, of Cross Plains, Dr. Copeland was born August 4, 1872, at Clifton. He received his medical training in Atlanta, Ga., and at the old Memphis Hospital Medical College, Memphis, Tenn. He was graduated from the latter institution in 1910. Since that time he had practiced in Gary and in Timpson.

DR. A. G. COPELAND

Throughout most of his professional career Dr. Copeland was a member of the State Medical Association and American Medical Association, first through Panola County Medical Society, then through Shelby County Medical Society, and after its organization, through the Shelby-San Augustine-Sabine Counties Medical Society. He was a member of the Christian Church and of the Masonic Order.

On May 9, 1897, at Comanche, Dr. Copeland married Miss Madge Huse. He is survived by his wife, one son, three daughters, three grandchildren, and three half sisters.

Dr. Uriah Goodman Mitchell Walker, Jr., Flint, Texas, died August 30, 1947, in a Jacksonville Hospital of pulmonary edema.

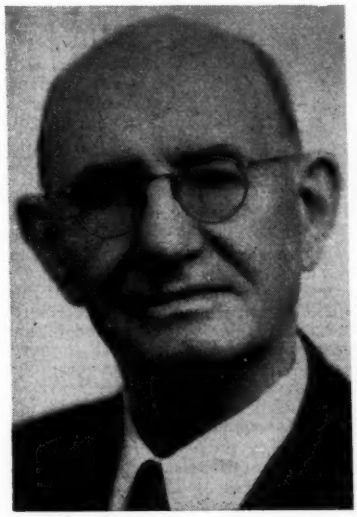
Born March 20, 1870, in Bullard, Texas, Dr. Walker was the son of Dr. U. G. M. Walker, Sr., and Mrs. Anna (Goodman) Walker. He attended the public schools of Bullard and Tyler, and old Memphis Hospital Medical College, Memphis, Tenn.; University of Texas Medical Department, Galveston; and old Dallas Medical College. He practiced in Smith County for forty-six years, serving Noonday, Tyler, Flint, and Bullard.

Throughout most of his professional career Dr. Walker was a member of the Smith County Medical Society, State Medical Association, and American Medical Association. He was a member of the Presbyterian Church, Woodmen of the World, and the Brotherhood of American Yeomen. He was active in the community in church, school, and political affairs.

Survivors include Dr. Walker's wife, the former Miss Susie E. Walker, whom he married February 3, 1893, at Gilmer; three sons, E. H. Walker, Bullard; C. M. Walker, Houston; and B. S. Walker, Flint; one daughter, Mrs. E. J. Lacombe, New Orleans; and one sister, Mrs. S. A. Fain, Tyler.

Dr. Thomas S. Grissom died at his home in Mount Pleasant, Texas, on September 27, 1947, of congestive heart disease.

The son of Willis B. and Martha (Heffner) Grissom, Dr. Grissom was born March 28, 1871, in Titus County, Texas, where he spent most of his life. He was reared on his father's farm and attended the nearby country schools. After teaching school for four years, he began to study medicine under a local physician. He entered Tulane Medical College, New Orleans, in 1893, and was graduated from old Memphis Hospital Medical College, Memphis, Tenn., in 1900. Meantime, Dr. Grissom had been licensed to practice in 1894, and from that time until his death he had devoted most of his time to general practice in Titus County. He was located for four years in Ripley, and then he moved to Mount Pleasant.



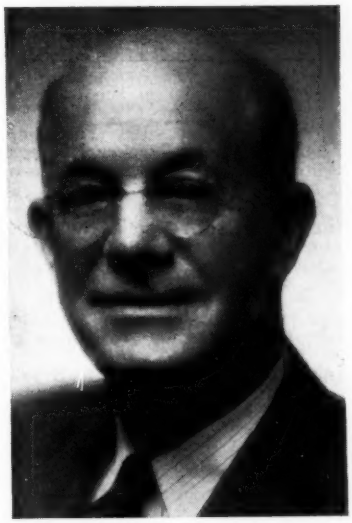
DR. THOMAS S. GRISSOM

Continuously since 1905 Dr. Grissom had been a member of the Titus County Medical Society, State Medical Association, and American Medical Association. He was president of his county society several terms during the 1930's and from 1944 until his death. He was a member of the Southern Medical Association. For forty years he was division surgeon for the St. Louis, Southwestern Railroad Company. He was a member of the Masonic Order, Knights of Pythias, and the Mount Pleasant Chamber of Commerce. He was a member of the Methodist Church and had been a steward for twenty years.

Dr. Grissom was first married in 1896 to Miss Augusta Blythe, who died in 1907, leaving three children, Thomas A. Grissom, now of Shreveport, La.; Lucille, now Mrs. Riley W. Carlton, Lubbock; and Mrs. Daisy Buchanan, Mount Pleasant. A second wife, the former Miss Della Barrow, died in 1927, and is survived by a daughter, Mrs. Johnny Morrow, Waco. In addition to his four children, Dr. Grissom is survived by his wife, the former Miss Margaret Richardson, whom he married October 31, 1928, in Greenville.

Dr. Charles Campbell Green died at his residence in Houston, Texas, on August 31, 1947, of hypertensive cardiovascular disease.

The son of John E. and Susan Morgan (Bridges) Green, Dr. Green was born March 22, 1882, in Selma, Ala., but came as a small boy to Houston, where he attended the public schools. He received his academic education at Southwestern University, Georgetown, and Vanderbilt University, Nashville, Tenn. His medical degree was obtained in 1910 from Tulane University, New Orleans. He served an internship at Charity Hospital, New Orleans, and then returned to Houston to practice. With the exception of a period of service during World War I as a captain in the Medical Corps in France, Dr. Green was in practice in Houston from 1910 until a few months before his death. He was assistant city health officer from 1913 through 1917, during which time he led a fight for wrapped bread and for regulations requiring that meats and fish for sale be kept under glass. Since 1919 he had specialized in surgery. For a number of years he was chief surgeon for the Southern Pacific Railroad in Houston. He was consulting surgeon and professor of clinical surgery at Baylor University College of Medicine, holding the title of professor emeritus after July, 1947. He was a member of the staff and of the board of directors at Methodist Hospital and a member of the staff of Hermann Hospital.



DR. CHARLES C. GREEN

Throughout his professional career Dr. Green was a member of the Harris County Medical Society, State Medical Association, and American Medical Association. He was secretary of the Section on Gynecology and Obstetrics of the State Medical Association in 1928 and chairman of the Section on Surgery in 1936. He was a fellow of the American College of Surgeons, a member of the founders group of the American Board of Surgery, and a member of the Texas Sur-

gical Society and the Southern Surgical Society. He was a Methodist, a Democrat, a past president and member of the Rotary Club, and a member of the Masonic Order, Shrine, Kappa Sigma and Phi Chi fraternities, and the Houston Country Club.

On January 24, 1911, in New Orleans, Dr. Green married Miss Lucretia Gore, who died January 13, 1925. He is survived by a second wife, the former Miss Amelia Eagleton of Houston, whom he married June 24, 1927; one daughter, Mrs. George H. Black, Houston; one son, Charles Campbell Green, Jr., Midland; and two brothers, John E. Green, Jr., and Mac B. Green, both of Houston.

Dr. Christopher Adam Henry Arnecke died September 2, 1947, of coronary occlusion at his home in Arneckeville, Texas.

Dr. Arnecke, son of A. C. H. and Barbara (Sager) Arnecke, was born April 20, 1860, in DeWitt County, Texas. After his graduation in medicine from the University of the South, Sewanee, Tenn., he returned to Arneckeville in DeWitt County to practice. He had been in practice there fifty-five years at the time of his death and had operated a drug store since 1889.

Throughout his professional life Dr. Arnecke was a member of DeWitt County Medical Society, the State Medical Association, and the American Medical Association. He was a member of the Lutheran Church.

Surviving Dr. Arnecke are his wife, the former Miss Wilhemina Hausman, whom he married April 8, 1883; two daughters, Mrs. A. C. Hiller, Cuero, and Miss Amelia Arnecke, Arneckeville; four sisters, Mrs. Sophie Schultz, Cuero; Mrs. Christiana Schley, Victoria; and Mrs. Eliza Thieme and Mrs. Amelia Hiller, Arneckeville; six grandchildren; and four great grandchildren. Two children preceded their father in death.

Dr. Edwin Rudolph Svrcek, La Grange, Texas, died in an airplane crash at Hostyn, near La Grange, on July 20, 1947.

The son of Mr. and Mrs. John L. Svrcek, Dr. Svrcek was born July 30, 1916, at La Grange. He attended the local public schools; Draughon's Business College and St. Mary's University, San Antonio; the Robert B. Green School of Technology, San Antonio, from which he received a certificate as medical technologist in 1938; and the University of Texas, Austin, from which he secured the degree of bachelor of arts in 1940. In 1939 he worked as a medical technologist in the laboratories of the State Health Department, Austin. For his medical education Dr. Svrcek went to St. Louis University, from which he was graduated in 1944. He served an internship in 1944 at the Robert B. Green Hospital, San Antonio, and was house physician and surgeon in 1945 at the same institution. He then began practice at La Grange and in October, 1946, opened his own clinic there.

DR. EDWIN R. SVRCEK

Dr. Svrcek was a member of the Colorado-Fayette Counties Medical Society, the State Medical Association, and American Medical Association. He was a member of the Army Reserve Medical Corps on an inactive status.

Surviving Dr. Svrcek are his wife, the former Miss Gladys Haase of St. Louis, whom he married September 14, 1945, in Galveston; his parents, Mr. and Mrs. John L. Svrcek, La Grange; and four brothers, August Svrcek and Louis Svrcek, La Grange; and Emil Svrcek and John Svrcek, Austin.

Dr. Perry C. Pluenneke, Overton, Texas, died July 2, 1947, in a Dallas hospital of carcinoma of the rectum complicated by pyonephrosis.

Dr. Pluenneke was born August 23, 1887, in Castell, Llano County, Texas, the son of Charles and Amelia Pluenneke. His grandfather fought under Sam Houston at the Battle of San Jacinto and his great grandfather in the American Revolution. Dr. Pluenneke was a graduate of Southwestern University, Georgetown, and received his medical degree in 1911 from old Southwestern University Medical College, Dallas. He did postgraduate work in eye, ear, nose, and throat at Tulane University, New Orleans, and in obstetrics at the Chicago Lying-In Hospital. His internship was served at St. Paul's Hospital, Dallas. Dr. Pluenneke began practice in Clifton, but moved in a short time to Cranfill's Gap, where he was active for eighteen years. In 1929 failing health forced him to retire from practice for about a year. He then resumed his practice in Waco, but again was compelled to retire in 1938 for several years. He later practiced for a time in Hawkins and in Overton, where he had been located for four years prior to his death.

DR. PERRY C. PLUENNEKE

Throughout most of his professional career, Dr. Pluenneke was a member of the State Medical Association and American Medical Association, first through Bosque County Medical Society, then through McLennan County Medical Society, and later through Rusk County Medical Society. He was a Methodist and a Mason. During World War I he served as a first lieutenant in the Army Medical Corps.

In 1909 Dr. Pluenneke married Miss Florrie B. Keyser, of Mason County. The couple had a daughter, Miss Sylva Eunice Pluenneke, now a resident of Dallas. Dr. Pluenneke on October 1, 1946, married Mrs. Ruth Griffies, Tyler, who also survives. Additional survivors include three sisters, Mrs. A. H. Keyser, Fredericksburg; Mrs. U. B. Dye, Albert; and Mrs. Henry Raesner, San Antonio; and one brother, M. A. Pluenneke, Mason.